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THE ASTHMATIC CHILD.[1]

By D. G HAMILTON,
Sydney.

THERE is nothing to be frightened of in the asthmatic child. He is simply a child with an unduly sensitive respiratory tract that responds in a curiously exaggerated fashion to anything that irritates it. The response consists in the nose of sneezing and watering, itching and blocking, and in the chest of wheeze and cough and profuse secretion. The irritants that stimulate this reaction can be very varied indeed. Sometimes there is only one irritant, but nearly always there are many.

The recipe for treating the asthmatic child has three simple ingredients. The first is to define the irritants and minimize their impact on the child. The second is to provide something that will give symptomatic relief in the attacks. The third is to instil into the parent confidence and into the child belief in a programme that is constructive and optimistic.

The Irritants.

Emotional Tension.

The first of the irritants, and quite the commonest, is emotional tension. Very often these children are keen, alert, intelligent and overactive; they do not know how to relax; they live to their limit all the time. What they do is urgently important to be done, and all that they have they put into it. They exhaust themselves. They want to be at the top of their class at school, and they want to be better than their playmates. They want to excel, but sometimes are timid or frail, and lack the courage or capacity to match their desire. They keep themselves primed all the time for any trivial thing to upset them. Sometimes the emotional tension arises from the parents. All too often we find that the parents of these children believe that their child is delicate and needs to be protected. They take too great care of him. The child may accept this over-protection and become dependent on the parent, and when he is thrown into the world, when he starts school or kindergarten, he finds himself timid and afraid to deal with the world around him without the help of mother to look after him. He becomes upset and distressed and he gets asthma. Sometimes the child rebels against this over-protection of the parent, and then conflict develops at home. This is the situation where boarding school is worth while. Only twice have I sent an asthmatic child to boarding school. I was most interested when Dr. Lindsay Dey told me that for thirty years he has been looking after the girls in a fairly big Sydney girls' boarding school, and not once has he been called to the school to see a child with asthma. Really I thought parents were better for their children than that, and I still think they are. Parents may be too anxious, protective, indulgent, impatient or ambitious, but only

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on May 29, 1958.

occasionally, I believe, is there such tension between parent and child that separation is warranted.

The parents must be made to understand the importance of their child's learning how to become a calm, casual, confident little person. They must learn the importance of helping this child to relax, of helping him to face life with confidence and ease. As a temporary measure sedatives play a very real part, and the continuous maintenance use for six months or more of phenobarbitone, "Oblivon C", "Largactil" or any of the many other sedatives that you may prefer is often a measure of great help. But much more important is helping the parent to understand what is the emotional stress in the child's life, and helping the child to become a composed, confident and optimistic person, and teaching him to stand on his own without the help of drugs and without the help of parents to face life as he finds it. This does not happen in a day or a week, but it does happen in a year or two, or three. The parents who understand this problem are among the ones whose children get better from their asthma.

Respiratory Infection.

The second trigger, and this is just as important, is respiratory infection. Respiratory infection in the allergic child is not an easy problem. It makes an impact on the child in two ways. Sometimes respiratory infection acts as a direct irritant in precipitating the attack of asthma. The child does get a cold or gets tonsillitis, and as a result gets an attack of asthma. But respiratory infection may act in a second way on the allergic child. I said that the reaction in the allergic child's nose to an irritant is blocking and excessive secretion. The blocking is due to swelling of the mucosa. When there is a combination of blocking and secretion there is obstruction of drainage, and when there is obstructed drainage of infected material there is a tendency for the infection not to get better. So it is not uncommon for infection to become established as a chronic entity in the upper respiratory tract of the allergic child. Many mothers say their child's asthma always starts with a cold. But let me ask you, please, to be sure that it is a cold that you are dealing with before you accept the mother's statement. So often it is simply an allergic reaction, a little bit of hay fever or allergic rhinitis that precedes the asthma. The distinction is easy to make. You see, hay fever comes quickly, produces a lot of sneezing, produces a watery and non-purulent nasal secretion, a good deal of blocking, quite a bit of itching and nobody catches it. But a cold produces a little sneezing, the discharge that is watery at first soon becomes purulent, and somebody else catches it. How many colds in your house have gone through the family? The infectivity is a most important diagnostic feature. The child who gets an allergic rhinitis is likely to get it at any season of the year at all, but the child who is getting repeated respiratory infections, whether they are a trigger to asthma or not, gets more of them in the winter than at any other time. The seasonal incidence is an additional feature that helps you to make a diagnosis of infection. So do not believe the mother without further inquiry when she says: "It's always a cold that starts his asthma."

Infection is a more common trigger in young children. If you feel convinced that infection is playing a part, there are a number of things you can do. The measure that I have found of the most help is the continuous use of a prophylactic dose of sulphadiazine during the winter months—in a young child five grains twice a day, in an older child half a gramme twice a day. It very materially cuts down the frequency of their winter asthma. You can explain and get the parent to adopt sensible hygiene. If somebody in the house has a cold they should not hug or kiss the child. The child should not soak in hot baths and then get chilled afterwards. He should not have a hot bath going to bed. He should be taught to have a warm shower followed by a quick cold one. He must not be coddled and over-protected and dressed in woollens all the year round to save him from these respiratory infections that he is getting. He is taught to grow up as a hardy little boy. By doing so his resistance to respiratory infection improves. The third measure that is of some value is the use of vaccine. I have not used vaccine a great deal, but I have used it enough to believe that it sometimes improves resistance to respiratory infections. I hope that some of the allergists will have something to say about this later on.

There is one other thing I should say about infection. It concerns the place of tonsillectomy. How often we see children who have had their tonsils out because their mother told the doctor that they got colds before they got asthma and would he take their tonsils out. Their tonsils came out, but their noses got much worse and their asthma got worse. Tonsillectomy is occasionally, but only very occasionally, indicated in the asthmatic child. It is indicated when the child is getting frequent attacks of tonsillitis and when these attacks initiate asthma, when it is quite clear that tonsillitis, not an upper respiratory infection, is the thing that triggers off the attacks. Even in this child I should always try maintenance protective sulphonamides first. If they fail and tonsillitis still goes on occurring, then I agree to tonsillectomy. Often I have seen a child who is worse after his tonsillectomy. I believe the tonsils do serve as a protection to the upper respiratory tract and help the child to develop immunity. I believe that subjecting an emotional allergic child to hospitalization and operation may very well be such an emotional trauma as to make his asthma worse. In properly selected cases and with proper pre-operative sedation the operation is good. In all the others it is thoroughly bad.

Weather and Temperature Change.

The third trigger is weather and temperature changes. So often when the wind blows the child gets an attack of asthma, or if the hair is washed, if he runs about and gets hot and sweaty and then sits down in the shade and cools off quickly, if he goes to bed after a hot bath with his head sweaty and damp or if there is a cold snap in the weather. There is no question that a sudden drop in temperature of the atmosphere or of the child's own body is a very potent trigger to set off attacks in these allergic children. Have you seen an allergic child hop out of a warm bed in the morning on to a cold floor, with no slippers and no dressing gown on, and he sneezes and he sniffles? The thing to do about this is to toughen the child up. I like them to wear cotton singlets throughout the whole year. I think woollen singlets directly against the skin make the skin sweaty and tender, and when they are taken off in the spring the children run into trouble. A woollen sweater on a cold day is fine. Contrast morning showers, a warm one followed by a cold one, light clothing, sunbaking and swimming make children hardy. We cannot stop the weather changes, but we can toughen the child so that he can stand them.

Specific Allergens.

The next trigger is the wide group of specific allergens—the house dust, the pollens, the strawberries, the very many things. We can sort those out by taking a careful history. We can help to sort them out by skin testing. In young children I firmly believe that skin testing is a most unreliable procedure, and rarely have I found much help from it in them. In older children it is quite often a real help. But unless a positive skin reaction coincides with the clinical survey of the child, do not believe it. If a child's skin reacts to cat hair and he gets hay fever and a rash when he nurses the cat, then, of course, that is important. If he reacts to some pollens and his asthma is predominantly restricted to the pollen season of that particular grass, that is significant. But if he reacts to strawberries, but he can eat a whole punnet without being troubled, then the skin test is a lot of nonsense.

Interpreted properly, and in older children, skin testing is of value. Desensitization is something that is only occasionally indicated, I believe. On a number of occasions I have had a frightened fighting child brought into my room, and his mother has said: "He is having a course of injections because he is sensitive to house dust, kapok and rye grass, and I can't get him to the doctor any longer to have them, and he is very much worse with his asthma since he started on them." I believe it is the emotional stress of the course of injections that is

making the child worse. Whenever we do decide to desensitize a child we must remember that emotion is a more potent trigger and a more common trigger in asthma than those specific allergens that cannot be avoided. By all means, if you can, remove the child from contact with specific allergens. If a child is calm, cooperative and placid and does not mind needles, if you can give needles in a friendly way that does not upset the child, and if you have demonstrated without doubt a specific allergen that is important and cannot be removed from the child's environment, then desensitize the child. Such an allergen is usually a pollen. I think it is a great pity that needles have come to play such a part in medical practice. We should do all we can to get away from them. A patient's father once gave me a graphic description of his local doctor. It was at the time when vitamin B_{12} was a popular therapy for the child who would not eat and for the child who did not grow very well—you know, when he was in one of those physiological periods of slow growth that most children have. Said this father: "Have I had a bellyfull of that bloke, riding around the countryside in his Customline oozing goodwill and bull and vitamin B_{12} at the point of a needle."

Digestive Disturbances.

Dr. Edgar Stephen used to describe Saturday-night asthma. He said that it was due to the fact that mother and father had been to the pictures, the races, the football match or the pub and come home with fish and chips for tea from the shop around the corner, and the child, with his digestion upset, got asthma. I do not know about that, but I do know that some children have apparently a digestive instability, and with their asthma they often get pain in the abdomen, and they are prone either with their asthma or at other times to have other digestive symptoms, diarrhœa, flatulence, abdominal discomfort and anorexia. Sometimes we can demonstrate that these children are allergic to a food, and that food should be avoided. Sometimes I have found that the exhibition of dilute hydrochloric acid with their meals, five or more minims, depending on the age of the child, is a measure of real help. The diet should be a plain simple one, low in fat, and a big meal close to bedtime should be avoided.

Relieving the Attack.

The second part of our programme is to relieve attacks. In the medicine cupboard at home should be something to give to the child as soon as an attack starts. The first and early dose does most good. There are many drugs we can use. (i) Ephedrine is the sheet anchor. Ephedrine sometimes excites, and it is well combined with a sedative such as phenobarbital or one of the antihistamine syrups used as a vehicle, a convenient preparation that relieves the nose as well as the wheeze. (ii) Aminophylline can be used, perhaps best by the parent as a suppository, a very useful remedy indeed. It is also contained in a number of useful preparations for oral use. (iii) "Neo-epinine" and "Isuprel", powerful drugs, are often effective. Sometimes they upset children because they produce so much palpitation, but a quarter to half a tablet, depending on the age of the child, dissolved in the mouth, may give good relief. (iv) Antihistamines are of more use for allergic rhinitis than for bronchospasm, but I often use them as a vehicle for ephedrine, for their effect on the nose and for their general sedative effect. (v) Iodides may play a part in the child whose attack of asthma is going on for a long time. Here sticky secretion in the bronchi causes a good deal of the obstruction. Iodides, by helping to liquefy that sputum and allowing the child to move it, probably help. I am not very convinced about it but it may be true. On the other hand antihistamines at this stage of the attack are bad because they tend to dry secretion and hinder its removal. It is in the early stage, when there is watery rhinorrhœa as well as commencing wheeze, that antihistamines are of value. (vi) Sprays of adrenaline and "Neo-epinine" give relief, and properly and carefully used are worth while. But it is so easy for the child to become wedded to his spray. It is so easy for the child to overdose himself with it. And the more often a drug is given, the sooner resistance to it develops. I rarely recommend sprays, but if a patient is getting good help from them I let him go on using them, counselling caution. (vii) Sedatives sometimes play more part than antispasmodics, particularly in the child who panics in an attack. In such a situation a grain of pentobarbital may give more relief than a quarter-grain of ephedrine.

When the doctor is called, after the remedies held by the mother have failed, what more can he do? He can give adrenaline by injection. But let me warn you about the danger of giving adrenaline by injection if the patient has recently had "Neo-epinine" or "Isuprel" by mouth or by spray. I have never seen any patients, but I have heard of three, who died from this combination. They are very potent drugs, and a period of at least four hours should intervene between the doses of adrenaline and those two drugs. They should never be followed closely one after the other; and the patient should be warned of this danger too, for he may have one or the other in the form of tablet or spray, even perhaps without your knowing. Large doses of adrenaline too are dangerous. I have seen a child of four years die in profound shock after his doctor had given him 20 minims of adrenaline by injection, "one minim per minute until his attack was relieved". The attack was certainly relieved. Adrenaline must be used in proper doses: one minim in the baby to seven at the end of childhood.

Aminophylline can be given by intravenous injection. It should be given slowly and carefully and well diluted, for it too is a potent and lethal drug.

Cortisone or one of its derivatives can be given. I believe the steroids should be reserved for those patients who cannot be relieved by anything else. I have certainly seen life saved by cortisone. Status asthmaticus so severe that nothing else touches it responds sometimes like magic, and I have seen a child who I did not believe would be alive in the morning bright and happy and well after a night on cortisone. I am worried about the patient who has chronic mild status asthmaticus, an emphysematous chest, always some wheeze and now and then exacerbations that are quite bad and sometimes even dangerous. Occasionally I have been tempted to put that child on to maintenance steroid therapy; but I have never done it. I have been told of an adult patient who was in just such a state, a constant invalid, and who was transformed into a fully active happy woman by maintenance cortisone. How long that goes on I do not know. I would be more willing to try this treatment in the adult than in the child, who has a long life ahead and many endocrine changes still to take place. I am frightened to use the therapy. One child, in whom I resisted this temptation three years ago, I have watched grow into a fairly healthy little girl with occasional attacks of asthma. Indeed, I believe we should very rarely use maintenance dosage of any of these drugs that relieve asthmatic attacks. They are weapons that are blunted by use, and if we use them when they are not really needed we may find them ineffective when we want them most.

Another measure that helps to relieve the attacks is breathing exercises. They teach the child to use his nose and chest fully, and to expire fully. By breathing exercises a child can sometimes abort an attack in its early stages. Any asthmatic child with chronic emphysema should certainly learn these exercises from a physiotherapist.

Building the Morale.

The third part of our programme of care for this child is the building of morale, and it is probably just as important as the other two parts. And for this purpose the best building materials I know are the understanding of the mother and the friendship of the child. The mother must understand what we are doing. If she understands she can cooperate in a constructive, logical and optimistic programme of care for her child. If we can get her to see what it is that is irritating him, and if we can get her to cooperate in minimizing these irritants, if we can get her to be optimistic and happy and casual with him, if we can get her to help him to grow into the calm, confident, well-balanced little person that we want, then

her child will grow out of his asthma. We get that cooperation from the mother by getting her to understand what we are driving at. We cannot just see her once and give her a prescription. I give her a sheet that sets out much of the first part of this lecture. These mothers and children should be seen often to discuss with the mothers the little problems that keep recurring and to win and hold the friendship of the child.

It does help for the child to like you and believe in you. To this end a doll or a train is so much better than a needle. A pat on the shoulder, a hug, an affectionate word is such splendid therapy. It is so easy for me to give one of my patients a hug and call her sweetie-pie, and it is so difficult for you, Mr. President. To have the child wanting to come to see you and believing that you are curing his asthma, I am sure helps. You see, when we are dealing with children we are dealing with growing, changing, developing, adaptable little people. They are not adults who are set in their way of life. If we show them how, they can become resistant to their irritants, slowly and patiently by the power of adaptation that is in all living things while they are still developing. And so they grow out of their asthma.

Time is on our side when we are dealing with the asthmatic child, for the natural history of allergy is eczema in infancy, asthma in childhood, hay fever in adult life and asthma again in old age. But when we deal with a child we need tell only the first two chapters of that story. And indeed if our treatment has been wise enough, the tale will often finish there.

A STUDY OF RESULTS OBTAINED AT THE ASTHMA CLINIC, SCHOOL MEDICAL SERVICE, N.S.W. DEPARTMENT OF PUBLIC HEALTH.[1]

By NOEL SOLOMONS,
Deputy Director, School Medical Service.

IT is my purpose tonight to outline the results obtained in the Asthma Clinic attached to the School Medical Service, New South Wales Department of Public Health. As the time allotted to me is limited, I will endeavour to make my preliminary remarks as brief as possible, and then present the actual findings of the survey of results which has been carried out in the clinic continuously since 1954.

Before proceeding any further, I think that a brief history of the clinic may be of interest. After many years' work in trying to find an effective method of relieving chronic upper respiratory tract infection, the late Dr. R. J. Whiteman (1951) observed that the neglected common cold appeared to be the underlying cause, and gradually evolved a treatment designed to treat such colds effectively. That some of the patients he treated also suffered from asthma was unknown to him until several stated that since undergoing the course of treatment for their nasal infection their asthma attacks lessened markedly in both frequency and severity. Subsequent asthmatics treated reported similar findings with such regularity that, in 1937, a clinic was opened at Lewisham Hospital for the treatment of asthma under his supervision. The results obtained at this clinic were so satisfactory that, after thorough investigation, a further clinic was opened at the Royal Prince Alfred Hospital under the auspices of the Department of Public Health. After later searching inquiries by a special investigation committee set up for the purpose, the general opinion expressed was that the majority of the patients had derived substantial benefit from the treatment, and that the results compared very favourably with other recognized methods of treatment in showing the patients a new way of life. This clinic functioned for two years and was finally closed in 1946. In the next two years, Dr. Whiteman conducted a similar clinic at the Ryde Soldiers' Memorial Hospital, and it was during this time that he began to realize that equally good results could be obtained in children suffering from bronchial asthma by inhalation and home supervision, and without the hitherto preliminary antrostomy and hospitalization. The Department of Public Health showed great interest in this modified treatment, with the subsequent result that in 1950 a clinic attached to the School Medical Service was opened under Dr. Whiteman's supervision. In January, 1954, after the death of Dr. Whiteman, I was asked by the Director of the School Medical Service to undertake the supervision of the clinic. I agreed to do so, after a few days spent in investigating the records, and in spite of my bias in favour of the then more accepted methods of treatment.

The treatment, as carried out in the clinic, is simple, and can be done entirely in the home; it entails no operative procedure of any kind, and no injections. It is tedious, for the parents especially, and demands strict attention to detail. It does not interrupt the child's schooling at all, and we have no record of any child developing psychiatric or psychological disturbance directly attributable to the treatment. In fact, practically all the patients improve psychologically, probably due to the fact that they are given a positive, simple treatment to carry out, and that right from the beginning their asthma attacks invariably lessen and they are able to be composed in their own home surroundings, and can keep up with their daily school work. It should be emphasized that these children lose a minimum of school time as, prior to commencing treatment, arrangements are made with the Department of Education for the children to leave school and be enrolled at the Correspondence School at Blackfriars. By this means, they rarely lose even one day's schooling, as they do their lessons even when they are confined to bed, unless they are too ill with any actual attack.

It is generally agreed, nowadays, that there are both intrinsic and extrinsic factors involved in the diathesis of asthma, but Dr. Whiteman maintained that the intrinsic factor of infection in the upper respiratory tract was the predisposing cause of attacks in children suffering from bronchial asthma, even when the attacks were "triggered off" by extrinsic factors, such as pollens, dander or food, and by other intrinsic factors, such as emotional upsets and other psychological disturbances. In the last few years, this view has been supported by other physicians, as for example, Albert, who in 1955 stated: "There is little doubt of the existence of a strong etiological relationship between certain pathological conditions in the nose and paranasal sinuses, and bronchial asthma." Then again, in discussing the theories that have been suggested to explain the mechanism by which infection of the upper respiratory tract may provoke asthma, Albert stated: "One theory is that infections act purely as non-specific factors in individuals who are sensitive to non-bacterial allergens (extrinsic). They lower the threshold of allergic tolerance so that attacks of asthma are now caused by allergens to which the patient was only slightly sensitive and from which formerly he had no clinical symptoms." Our experience in the clinic bears this out, and it is believed that the extrinsic allergens become activated only during periods of acute upper respiratory tract infection, and that Dr. Whiteman's theory that the common cold is the real activating agent is correct. It is noticeable that the great majority of children with bronchial asthma suffer from frequent common colds. It is thought that if the children can build up a resistance to these colds, and if they can be eliminated or considerably reduced in frequency and severity, then the chronic upper respiratory tract infection will clear up, and the vicious circle will then be broken and the attacks of asthma cease.

Chobot, in 1957, stated: "The importance of infection as a causative factor in asthma in children cannot be over-emphasized." In the same article, he states that in 400 asthmatic children, infection, either alone or combined with other sensitizing conditions, was present in 85·25%. In Australia, in 1957, Alan Williams, pathologist, Royal Children's Hospital, Melbourne, stated: "I see asthma as merely a generalized acute catarrhal bronchitis with swelling of walls due to increased vascularity and cell infiltration with an exudate within the lumen and with a bronchiolitis." Stanley Williams (1957), in the same series

[1] Read at a meeting of the New South Wales Branch of the British Medical Association on May 29, 1958.

of articles, stated: "Asthmatic children are born with a susceptibility to the production of bronchiolar spasm when they get an infection (upper respiratory tract infection) ... Emotional stress produces an attack most readily when the susceptible child has a mild infection, and then over-exertion or excitement leads to the attack. The asthmatic child, when feeling well and free from respiratory infection or asthma, can tolerate the common excitements of childhood, such as birthdays, and a trip to the circus, quite as well as other children." Gwen Donald, in 1957, stated: "These children should be kept away as much as possible from sources of respiratory infection, that is, from people with coughs, colds or sore throats and they should also avoid crowds, particularly in indoor places." Then, later on: "Certain atmospheric conditions also irritate these children and therefore should be avoided as much as possible, particularly cold winds and fog and a dust-laden or pollen-laden atmosphere."

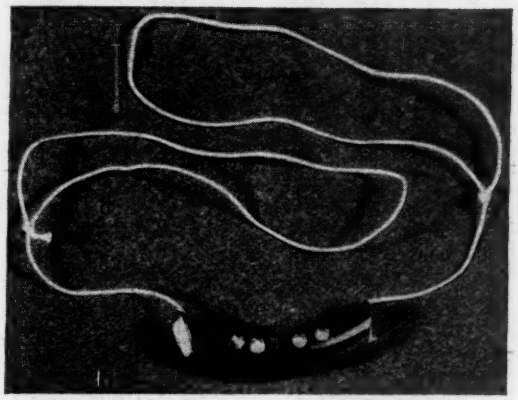

FIGURE I.
The special inhaler used at the commencement of treatment.

Most writers advocate antibiotics and vaccines for the treatment of the infection, but our experience with antibiotics was disappointing. In 1954, of 50 consecutive children commencing treatment under the supervision of the clinic, post-nasal swabs were taken from every second child, and the organisms obtained were cultured, identified, and submitted to sensitivity tests to the antibiotics then in common use. The appropriate antibiotic was then administered for a given safe period, the remaining 25 children being used as controls. No appreciable difference was noted in the improvement of either group, both of which carried out the standard clinic treatment at the same time.

In presenting the outline of treatment, it is to be noted that it is simple, is carried out in the home, needs no specialized training, and, if carried out properly, returns the majority of these children to normal life and environment in a comparatively short time. This is permanent, providing they live sensibly and take reasonable care to avoid catching the common cold. On the other hand, for successful results it is essential to gain the wholehearted cooperation of both the parents and the child.

First, however, I should like to dwell briefly on the common signs and symptoms which these children invariably exhibit, and with which most of you are undoubtedly familiar. In addition to their recurrent attacks of asthma or bronchitis, or both, a large number also give a history of infantile eczema and urticaria. They invariably admit to recurrent "colds" with post-nasal discharge varying from the coryzal watery type to the thick yellow discharge of infected sinuses. Paroxysmal sneezing is a common symptom, whether the child has an actual "cold" or not. Practically all of them have persistent obstruction of the nasal airway, with mouth-breathing, due to enlarged turbinates, which are usually pinky-white in colour and moist with a watery discharge. A few patients also have nasal polypi. Cough is present in most patients, and except in those with actual bronchitis, is usually of the harsh, dry, hacking variety, and often accompanied by vomiting or "dry-retching" of watery, sticky mucus. Headaches are a fairly common symptom, as could be expected with upper respiratory tract infection. Dyspnœa on exertion is a constant sign and seriously restricts the child's activities in sport and play. Appetite is usually poor, with frequent attacks of nausea and vomiting during colds, and vague abdominal pains often occur. The majority of these children are grossly underweight and very puny-looking, with postural defects, such as kyphosis, forward neck and head, pigeon chest, and others. Most of them exhibit nervous abnormalities rang-

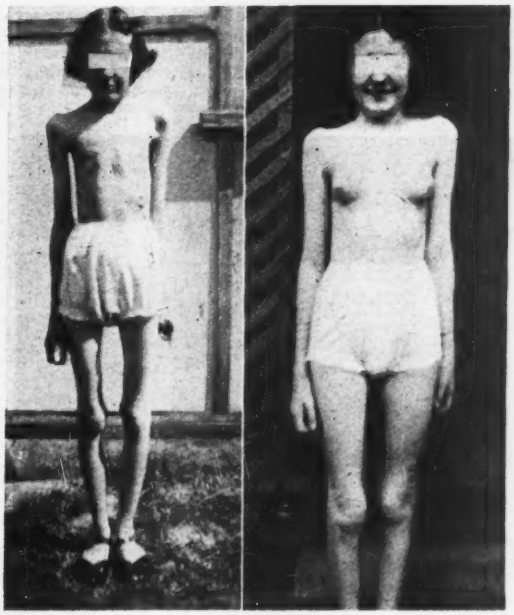

FIGURE II.

ing from a general state of being what the mother describes as "nervy" to definite behaviour problems and maladjustments, and in many cases it is thought that the actual predisposing cause of the asthma attacks is domestic turmoil or upheaval in the home. Associated with the nervous manifestations are many habits of an abnormal nature, such as thumb sucking, nose rubbing, nail biting, grinding of teeth, chewing of handkerchief or clothes, hair pulling, and similar actions. The complexion is almost always pale or pasty, and invariably there are dark, circular rings under the eyes, often accompanied by swellings over the cheekbones and a broadening across the nose which is so often associated with upper respiratory tract infection.

Most of these children also have disturbed nights, with restlessness, night terrors or talking in their sleep. Accordingly, the parents' sleep is also interrupted, either by these symptoms or by actual asthma attacks, very often several times each night. A proportion of the children also suffer from nocturnal enuresis, which has defied many methods of treatment, and it should be mentioned that threadworms are very common. In many cases there is a family history of asthma or bronchitis and of hay fever, and usually some member of the family is suffering from some form of chronic upper respiratory tract infection.

At the preliminary interview a complete history of each child is taken, and he undergoes a physical examination, including an X-ray examination of the chest. Inquiry

is made regarding domestic arrangements, as it is believed that the upper respiratory tract infection and the recurrent colds, on account of cross infection, cannot be successfully treated unless the patient is accommodated preferably in a room to himself, in which his bed can be placed in a position where he will not be in a direct draught. If a cold is neglected, these children invariably develop an attack of asthma, so the object of treatment is first to endeavour to protect the child, as far as possible, from contracting colds, and secondly, should a cold develop, to treat it promptly and clear it up as completely as possible. To gain this result, the parents are instructed that as soon as the child shows any signs of upper respiratory tract infection or nasal irritation, for example, nose rubbing, heavy eyes with dark circles under them, sneezing, headaches, restlessness at night, irritability, mouth breathing, and so on, then active treatment must be started without delay.

Before commencing the treatment, the parents are instructed that, if for any reason whatsoever the child should become ill and need medical attention, their own doctor is to be called and they are to carry out his instructions entirely. Full explanation is given to the

FIGURE III.

parents of every aspect of the treatment and the results to be gained by carrying it out properly at all times. If they intend to undertake the treatment, they are then given a printed form containing all the instructions to be observed and they are requested to sign a copy, which is filed, as an undertaking that they will cooperate fully with the clinic. The parents are asked to take a set of snapshots before commencing the treatment, three months after treatment, and again 12 months after the commencement of treatment. These include two snaps full face, a back and side view.

The treatment given to the children attending the clinic is essentially the same as that given by Dr. Whiteman with a few minor modifications. It is advisable here to again stress the fact that no operative procedure is carried out or advocated at all, and also that these children are not put to bed for long periods at a time. They are rarely, if ever, kept in bed for longer than two weeks at a time.

In those patients with obviously grossly infected tonsils and adenoids, the parents are advised to consult their own doctor with a view to their removal, if after a trial period of treatment at the clinic their asthma has not improved.

When commencing treatment the child is put to bed for two weeks and given a simple inhalation and a course of vitamin C. The inhalant, which consists of menthol, one drachm, eucalpytol, one drachm, isopropyl alcohol, 20 minims, oil of lavender, 10 minims, and rectified spirit to one ounce, is administered without dilution by means of a special inhaler filled with gauze (Figure I). The inhalant is applied to the gauze by means of a match stick, through small holes in the upper surface of the inhaler, which is then worn continuously under the nose during each period in bed. It is renewed three times a day, but it is important that only a small amount is added each time. Occasionally, a child may develop a slight irritation from the inhaler, and in such cases one or two drops of the inhalant may be placed on the pillow or the pyjama coat. Ascorbic acid is given in tablet form in a dose of 250 milligrammes night and morning for the first few days, and 50 milligrammes night and morning throughout the remainder of the time the child is under treatment for each cold.

At the end of the first fortnight the mother reports personally to the clinic, and providing the child has no cold or is showing marked improvement—and this is almost invariable—he is allowed up, but is confined to his own home surroundings, and as far as possible is allowed contact only with people who are not suffering from a cold. At the first sign of a fresh cold, the child is returned to bed and strict treatment is continued once more. As soon as the cold has cleared entirely—usually in a few days, or maybe even a week to ten days—he is again allowed up as before. For the first few weeks he may spend more time in bed than out of bed, but gradually as his resistance to colds is built up, the time spent in

FIGURE IV.

bed lessens and his freedom increases, until within some three months after joining the clinic, he is usually up and about for weeks at a time, and only in bed for four or five days at infrequent intervals. At this time, the restriction on his activities is relaxed and he is allowed to return gradually to his normal social environment. As he continues to improve, and as long as each cold he may get is treated promptly and completely, the average child is able to return to school and lead a perfectly normal life at the end of ten or twelve months. On his returning to school, the principal is informed that if the child develops any sign of a cold he will be kept at home until it is completely relieved.

It has been found that, when treatment has been carried out strictly by cooperative parents and child, the majority of children do not have any further attacks of asthma after the first few weeks, and many of them do not get any asthma at all from the commencement of their treatment. In some cases, if the colds are frequent and the nasal airway is blocked, with very little or no post-nasal discharge, nasal drops, such as "Vasylox" of "Argotone", are given, but these are stopped if any post-nasal discharge appears.

In cases in which it is considered that maladjustment or behaviour problems are "triggering" the attacks, and if no improvement is noticed within a reasonable time of commencing treatment, the parents and child are referred to a child guidance clinic.

Early in 1954 it was decided to begin a survey of the results of treatment and supervision as carried out in the clinic. Attempts have been made to follow up all patients who commenced treatment, both by letter and by visits to the home by trained nurses of the School Medical Service. Unfortunately, it has not been possible to

regain contact with some children who left the clinic for various reasons, but in the majority of patients, especially those who continued under the supervision of the clinic for more than a few months, we have been able to bring the survey up to date. It was found that the only reliable records dated back to 1951, and accordingly the survey dates from that time.

As bronchial asthma is in the nature of a diathesis, we do not use the term "cured", as we feel that, although relieved, asthma can return if the patient neglects to observe the fundamental principle of avoiding and treating recurrent colds and upper respiratory tract infection. The criteria used in assessing the results are as follows: Excellent—no attacks of asthma (or bronchitis) for two years at least, and all other symptoms either markedly improved or disappeared. Very much improved—one attack of asthma (or bronchitis) only since treatment began, and all other symptoms markedly improved or disappeared. Much improved—no attacks in the last six months, and all other symptoms much improved. Improved—still getting some slight attacks, but all other symptoms improved. No improvement—still getting as much asthma as formerly, with very little improvement in all other symptoms.

The total number of children who started treatment under the supervision of the clinic from January, 1951, to December, 1955, are the subject of this report, and they number 521; of these, 284 remained under supervision for two years or more, 133 left the clinic within three months, and 104 continued under supervision for periods varying between three months and two years. The reasons for these 237 children leaving the clinic are as follows:

Treatment not carried out in its entirety, or the parents were non-cooperative	81
Illness of mother	31
Child was so well that the parents sent him/her back to school	12
Uncontrollable child	11
Family moved to the country	6
Mother working and unable to continue treatment	4
Illness in other members of the family	2
Child left school and not seen since	2
Family went overseas	2
Advised by own doctor to discontinue treatment	2
Child sent to school in country	2
Mother had another baby	2
Family too large and mother could not cope	1
Child found to have leukæmia	1
Child developed acute appendicitis	1
X ray revealed bronchiectasis and child referred to own doctor	1
Language difficulty	1
Referred to child guidance clinic and treatment discontinued	1
No reason given	74

In all the results of the full period under review, the "excellent" group are added to the "very much improved" group because first, in the case of children who did not remain under the supervision of the clinic for two years, there can be no "excellent" results, and secondly, it is considered that one attack only after the commencement of treatment could be an "allowable deduction". The results of the treatment of the 521 children who enrolled at the clinic during the period January 1, 1951, to December 31, 1955, are as follows:

Excellent or very much improved	272 (52·21%)
Much improved	72 (13·82%)
Improved	144 (27·64%)
No improvement	33 (6·33%)

It is seen that 52·21% of these children were very much improved, even though a large proportion—namely 133—left the clinic within three months. If we eliminate these children, we have 70·10% very much improved, as follows:

Very much improved	272 (70·10%)
Much improved	72 (18·56%)
Improved	44 (11·34%)
No improvement	Nil

The following are the results obtained in 284 children who remained under supervision for two years or more:

Excellent	127 (44·72%)	77·82%
Very much improved	94 (33·10%)	
Much improved	46 (16·20%)	
Improved	17 (5·98%)	
No improvement	Nil	

The following are the results obtained in 104 children who remained under supervision for a period over three months and less than two years:

Excellent: None classified as such as not under treatment for two years.		
Very much improved	51 (49·04%)	74·04%
Much improved	26 (25·00%)	
Improved	27 (25·96%)	
No improvement	Nil	

The following are the results obtained in the 133 children who left the clinic within three months:

Improved	100 (75·18%)
No improvement	33 (24·82%)

At this stage, it should be pointed out that we are unaware of the present condition of a proportion of the children who left the clinic at varying periods within the five years. No doubt, if they have neglected their colds, then they have again developed asthma, as has been shown in several cases which have been followed up.

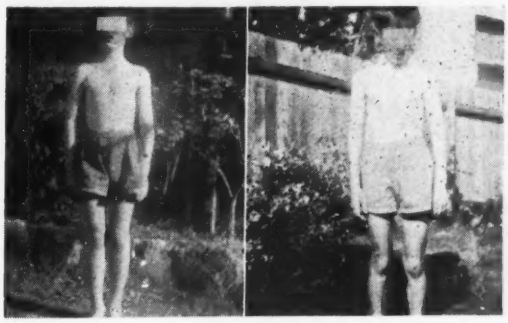

FIGURE V.

Before concluding, I should like to show some reproductions of photographs of a few children to illustrate their condition before and after treatment. They have been taken at random from amongst the photographs supplied by parents of their own children. Unfortunately, I was unable to arrange for more than two photographs to be reproduced on each slide, so I chose the front view in each case, and the left-hand one of each pair is the snap taken when the child first enrolled at the clinic.

The first photographs (Figure II) are of a girl who joined the clinic in 1953, at the age of 14 years. She then weighed three stone six pounds, and had suffered from almost continuous asthma since the age of three years, with several bouts of status asthmaticus. She had extreme dyspnœa in the day time and orthopnœa nightly, with all the concomitant symptoms of such a condition. After seventeen months, when the second photograph was taken, her weight was four stone ten pounds, and she had had no severe asthma for the previous thirteen months. In January, 1958, there was a history of three severe attacks of asthma during the previous two and a half years, although she still suffered from slight wheezing at times. All other symptoms had shown marked improvement, and she weighed five stone seven pounds. Full active treatment had been suspended by the parents in July, 1955.

The next photographs (Figure III) are of a girl who commenced treatment in August, 1953, at the age of 10 years; her weight was four stone twelve pounds. She had been suffering from severe asthma for five and a half years, the attacks occurring fortnightly. She had also been suffering from recurrent bronchitis for about eight years, with three or four attacks each year. After five months—when the second photograph was taken—she weighed six stone six pounds. In December, 1957, her review disclosed

that she had not had any attacks of asthma since enrolling with the clinic three and a half years previously, and no wheezing at all for three and a quarter years, and her weight was eight stone seven pounds. She is now vice-prefect of her school, and is perfectly well. She had Asian influenza late last winter, accompanied by a severe staphylococcal infection, but no asthma.

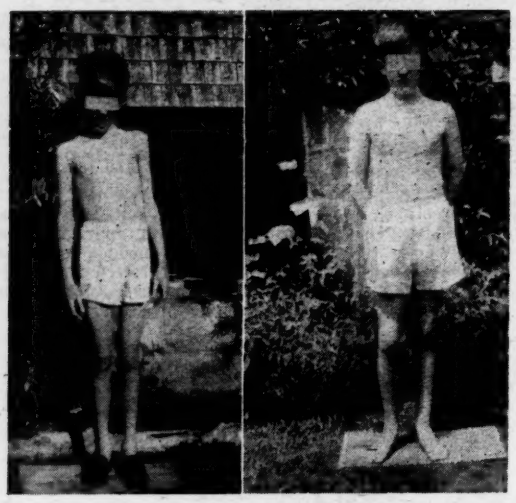

FIGURE VI.

The third girl (Figure IV) was seven and a half years old in January, 1953. She then weighed three stone twelve and a half pounds, and had suffered from asthma for five years, which had been increasing in severity and frequency,

FIGURE VII.

with wheezing between the attacks of asthma. Nine months later—the date of the second photograph—she weighed five stone four pounds. Her review in January, 1958, showed that she had had no asthma or wheezing for five years, that is, since she first came under the supervision of the clinic, and her weight was eight stone.

The next photographs (Figure V) are of a boy who enrolled at the clinic in May, 1955, at the age of eight years, when his weight was four stone nine pounds. He had suffered from severe weekly attacks of asthma, lasting for two or three days, over the previous five years. In May, 1957, he weighed five stone eight pounds. During the first twelve months of treatment he had had 15 slight attacks of asthma, but when last seen in December, 1957, had not had any attacks of asthma since January, 1957, although he still wheezed slightly when he contracted a cold.

The photographs in Figure VI are of a boy, who was aged 11 years in April, 1953, and weighed six stone three pounds. He had had asthma for nine years at fortnightly intervals. The attacks lasted from four to seven days and were increasing in severity, with wheezing almost every day between attacks. After four months—the date of the second photograph—his weight was eight stone 13 pounds. He had two severe attacks of asthma during the first five weeks after joining the clinic, but from then on he had only an occasional mild brief bout of wheezing until, in January, and again in March of 1956, he had a brief and slight attack of asthma, after a severe cold which he contracted at Christmas whilst on holidays, and which he was unable to treat in the customary manner. He had no further attacks of asthma or wheezing for the next 22 months up to the date of his last review in December, 1957, when he weighed eleven stone six pounds.

The last boy (Figure VII) came under the supervision of the clinic in February, 1953, at the age of 10 years. His weight was five stone six pounds. He had been getting attacks of asthma for eight years at four or five weekly intervals, and the attacks would last from twelve to fourteen days. After seven months—the date of the second photograph—his weight was seven stone, and in January, 1958, he weighed eight stone and had not had an attack of asthma since enrolling at the clinic five years previously.

If any practitioner is interested and would like to see the clinic functioning and learn more of its methods and work, he or she would be most welcome, and an appointment can be made at any time by telephoning or writing to Dr. Meyers or myself.

Acknowledgements.

I wish to record my thanks and appreciation to Dr. H. G. Wallace, Director General of Public Health for New South Wales, with whose permission this paper is presented; to Dr. E. S. A. Meyers, Director of the School Medical Service; to Sister G. M. Grimbly, Sister-in-Charge of the Asthma Clinic; and to the staff of the Publicity Branch of the Department of Public Health, for their help in its compilation.

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LETHAL WHOLE BODY IRRADIATION: SOME EXPERIMENTAL ISSUES.[1]

By PETER ILBERY,[2]
Sydney.

BY way of introduction it may be stated that whole body irradiation up to a lethal dose was unknown before 1945; and today, after a decade of research, knowledge of the effects of such radiation and particularly of correlation with radiation exposure in human beings, although comprehensive, is not cohesive. Hence a renewed and quickened interest in radiobiology.

[1] Abridged from a paper read at the Red Cross Blood Transfusion Service Hæmatology Seminar, Sydney, September 18, 1958.

[2] Research Fellow of the N.S.W. State Cancer Council and the Australian Atomic Energy Commission.

Anyone who has read Hachiya's "Hiroshima Diary" will be impressed with the utter hopelessness of treatment even when it was realized that the "bomb disease" was due to radiation. Atomic bomb casualties who had received an over-all estimated dose of six hundred rads or more invariably and inexorably died, just as the worker, cited by Levitt, involved in a nuclear pile mock-up criticality experiment, was just as inevitably to die after estimated whole body irradiation of five hundred rads. It is now common knowledge that radiation dosage of this order of magnitude results in acute radiation damage to the bone marrow and lymphoid elements, manifested by hæmorrhage and infection. The intestinal mucosa is only slightly less radiosensitive, and another acute manifestation of the radiation syndrome is therefore diarrhœa.

The hitherto hopeless task of trying to reverse the changes brought about by a lethal dose of whole body irradiation was the stimulus for the early workers in radiation protection, such as the late Egon Lorenz and Jacobson.

Experimental Work on Radiation Recovery.

In 1951 it was demonstrated that there was enhanced survival of mice following lead shielding of the exteriorized spleen during exposure to total body irradiation. Furthermore, implantation of normal intact unirradiated spleens after irradiation similarly exerted a beneficial effect on survival and recovery of hæmopoietic tissue. It was thought from experiments that the spleen provided a humoral factor which stimulated hæmopoiesis in the radiation-depressed marrow, or that it exerted a direct detoxifying effect on a "toxin" produced by irradiation of tissues.

It was not until as recently as 1956 that experimental work at Harwell showed conclusively that recovery from the effects of lethal total body irradiation was due to cellular recolonization of the destroyed elements of the host's bone marrow by the unirradiated cells of intravenously injected hæmopoietic donor tissue, and not to a humoral stimulation of the host's own bone marrow. This discovery itself resulted from the production of a chromosomal translocation during experiments in radiation genetics by Carter and his co-workers in the same Medical Research Council laboratory. The value of this translocation, designated T6, is that cells derived from mice carrying the translocation can be identified in metaphase of mitosis by cytological techniques (Ford and Hamerton, 1956).

Pure strain CBA mice (for practical purposes one mouse of such a strain stands in relation to another mouse of the same strain as one human monozygotic twin to its sib), having been exposed to 950 rads of X irradiation, all died within thirty days; this is expressed as the LD-99 30 days for this particular strain. Similarly, LD-99 whole body irradiated CBA mice injected intravenously with a suspension of hæmopoietic cells from an unirradiated donor usually survive more than thirty days—the conventional time taken to assess radiation protection. If T6 marked cells were given intravenously to resuscitate the lethally irradiated CBA mice (Ford *et alii*, 1957), five days after treatment virtually all the dividing cells of the bone marrow, spleen and lymph nodes and most of those from the thymus contained the small T6 chromosome. The chromosomes in the remaining cells showed very many structural changes, such as deletions, inversions and interchanges. These changes were obviously the result of heavy irradiation, and hence the cells containing them were identified as native to the host. With increasing time from irradiation and hæmopoietic homografting these cells disappeared, leaving hæmopoietic tissues in which all the dividing cells contained the marker chromosome and hence were of donor origin. Thus by the use of the T6 marker the chimærical nature of radiation protection was established.

Radiation Chimærism.

The chimæra is a mythical monster with a breath of flame, the head of a lion, the body of a goat and a serpent for a tail. In 1945 Owen found dizygotic twin cattle whose red cells were mixtures of each other's blood, and Race *et alii* (1957) have recorded human chimæras whose blood contains cells of their dizygotic twins.

Radiation chimærism is seen in mice that have been exposed to lethal whole body irradiation and that have received and accepted a hæmopoietic graft. For example, a lethally irradiated CBA mouse receiving a hæmopoietic homograft from strain C3H is designated a CBA/C3H radiation mouse chimæra.

Secondary Radiation Disease.

When the CBA strain is the irradiated host, varying donors from pure strains CBA, C3H, A and C57 give the same order of survival up to thirty days; but when the criterion is longer-term survival, the mice resuscitated with hæmopoietic tissue other than of the same strain as the host develop wasting and diarrhœa. These signs appear in homologous grafting across strains, as opposed to isologous grafting between the same strains; and these homologous chimæras are said to be suffering from radiation secondary disease, which has its onset in about the sixth week after irradiation and most commonly leads to death within several weeks.

TABLE I.

Survival to 120 Days of Radiation Chimæras having the Constitution Shown.

Host.	Donors.				
	CBA.	C3H.	T6/+.	A.	C57.
CBA	100	90	80	20	Nil

When CBA mice are the lethally irradiated recipients, in general C3H is a good donor, A a poor donor and C57 a uniformly fatal donor. From experience with many hundreds of radiation chimæras, a definite pattern of response can be seen between different groups when used as hosts and donors (Ilbery *et alii*, 1958; Uphoff *et alii*, 1958). The reproducibility of percentage take of hæmopoietic grafts between similar experiments points to an underlying genetic basis.

Gorer *et alii* (1948), on the basis of tumour transplantation, showed that susceptibility and resistance are determined by genes called histocompatibility genes.

TABLE II.

Alleles at the H-2 Locus.

$H\text{-}2^{dk}$.	$H\text{-}2^{d}$.	$H\text{-}2^{k}$.	$H\text{-}2^{b}$.	$H\text{-}2^{q}$.
A	DBA/2 BALB/C	CBA C3H	C57BL	DBA/1

The H-2 Locus.

The histocompatibility-2 or H-2 locus in the mouse lies on chromosome 9 and is closely linked with the genes fused tail, kinky tail and short tail. This linkage has been used to analyse the alternative forms or alleles at the locus, and to map their distribution in twenty-two inbred strains (Snell, 1956).

Mechanism of Secondary Radiation Disease.

The earlier table (Table I) now takes enhanced significance from superimposition of the H-2 loci on it (Table III).

The two strains which have a common H-2 locus are thus seen to suffer little from secondary radiation disease, i.e., CBA and C3H. A, which has greater genetic divergence, is not as compatible, whilst the far divergent C57 gives uniformly fatal results. Secondary radiation disease is thus a function of the degree of genetic divergence at the histocompatibility loci of host and donor and might be better named immunological secondary disease.

Armed with the knowledge that this "disease" has an immunological basis we may ask if the immune capacity of the host returns in some six weeks following irradiation and homologous hæmopoietic grafting, so that the genetic incompatibility between donor and host can result in a chronic tissue antigen-antibody reaction manifested as secondary disease. This belief was widespread until last year, for it is well known that radiation is a potent means of lowering the immune response. The question is now resolved in the negative. To recapitulate: it is known from the work with the T6 marker that early rapid colonization of the irradiated host's bone marrow spaces, lymphoid tissue and spleen, and later of the

TABLE III.

Host.	Donors.				
	CBA $H\text{-}2^k$.	C3H $H\text{-}2^k$.	T6/+ Unknown.	A $H\text{-}2^{dk}$.	C57 $H\text{-}2^b$.
CBA $H\text{-}2^k$	100	90	80	20	Nil

thymus, by the donor tissue takes place after intravenous injection. Although only one million cells are injected, after colonization and multiplication the donor tissue can now be considerable (perhaps about one twenty-fifth of the mouse's total weight), but by immunological assessment it is an overwhelming amount of donor tissue relative to the irradiated and immunologically depressed host. So that speaking of antibody-producing reserves there is now far more of donor tissue than host tissue. In fact the usual set up of a small graft relative to a large host is (still immunologically speaking) reversed. Therefore it is quite conceivable that the mechanism of secondary disease is due to a chronic antigen-antibody reaction, the direction this time being graft against host.

TABLE IV.

Survivals in Reciprocal Chimærism.

Chimæras.	Number of Survivals.
A ..	0/5
$(A \times C57)F_1$	
C57 ..	1/4
A ..	2/3
$(A \times C57)F_1$	
C57 ..	5/9

When the parental strain is donor to the irradiated F_1 (e.g., C57 to $(A \times C57)F_1$), long-term survival is poor. It is argued that the C57 hæmopoietic tissue recognizes the A foreign fraction of the $(A \times C57)F_1$ host and, forming anti-host, destroys the chimæra. Where the parental strain is the irradiated recipient to the F_1 homograft, long-term survival is greatly improved. It is now argued that the $(A \times C57)F_1$ hæmopoietic cells do not form anti-host, because this fraction is in their own genetic constitution.

The Leukæmic Cell as the Immunological Marker.

Further evidence as to the direction of the chronic antigen-antibody reaction being graft *versus* host is seen when the leukæmic cell is the immunological marker. For example, CBA mice receiving a CBA leukæmia intravenously will die of leukæmia in 14 to 21 days. CBA mice receiving the same leukæmia and, a week later, 950 rads of total body X irradiation and replacement therapy with C57 hæmopoietic tissue will die, but at a much later date with signs of secondary disease. Passage of their organs to other CBA mice is not followed by transmission of leukæmia. The assumption is that the donated C57 bone marrow cells and their daughters form anti-CBA, thus eliminating the CBA leukæmia, but at the same time causing a chronic antigen-antibody reaction with the CBA host resulting finally in its destruction with signs of secondary disease.

Murine and Human Leukæmia.

From our experience at Harwell it was possible to cure some murine leukæmias in their early passages by a suitable schedule of whole body irradiation and hæmopoietic homografting. Other leukæmias even in their first passages were not curable. One is often questioned concerning the feasibility of applying these experiments to humans.

If such a shocking procedure as lethal total body irradiation were contemplated for the treatment of human leukæmia, the following would be some of the first obstacles to be overcome.

Firstly, there is no known means of forecasting whether a given leukæmia is relatively radiosensitive or not. In some murine leukæmia experiments radiation dosage was pushed so high to eliminate the leukæmia that irreversible damage accrued to other tissues—e.g., gut. The alchemist's dream of the radiobiologist is the discovery of a radiomimetic substance which would selectively destroy the hæmopoietic elements (including the leukæmia) without the necessity for whole body irradiation.

Secondly, the technique of lethal whole body irradiation is non-existent. Although it is relatively simple to deliver a uniform dosage to all the tissues of a mouse, fall-off across the tissues of a subject as large as a human makes a difficult technical physical problem. Furth has said that leukæmia will be transmitted experimentally by the survival of only one leukæmic cell; so if the whole body does not receive the uniformly lethal radiation dosage, there will be areas where the leukæmic cells survive.

Thirdly, as with the experimental animal, the human L.D.-100 will vary from person to person as from strain to strain and from young to old. There are radiation mortality figures only for mice, in which case hundreds of animals are needed to determine this point accurately.

Fourthly, there remains the problem of secondary disease except in the special case in which a twin could be used for hæmopoietic homografting. The secondary disease might well be worse than the primary disorder.

Avoidance of Secondary Disease.

The classical experiments of the University College Hospital group reported by Billingham *et alii* (1955) have demonstrated the phenomenon of actively acquired tolerance. For example, a CBA mouse would normally reject cells from an A mouse; but if the CBA mouse is injected with A cells intravenously when it is less than twelve hours old (the immunologically null period), it can be shown to be harbouring these cells at a later date and will accept skin grafts from the A strain. Immunologically the mouse has acquired tolerance for the cells of another strain. This suggested to us a means of avoiding secondary disease reported earlier this year (Barnes *et alii*, 1958). The lethally irradiated mouse rendered immunologically null by whole body radiation is given an injection of hæmopoietic cells from another strain, the donor being less than twelve hours old. In experiments with the chimærical combination CBA/C57, hitherto having an invariably fatal outcome, as the result of using embryonic tissue the majority passed through the period normally characterized by secondary immunological disease, and later the CBA mouse replaced with C57 hæmopoietic tissue accepted C57 skin as a homograft.

Summary.

Rapid progress has occurred in radiobiology since the explosion of the first nuclear weapon. Protection against radiation was the original goal. When some measure of success was obtained in the experimental animal, the hæmopoietic homografting following lethal whole body

irradition suggested a possible cure for murine leukæmia. Human application in this field and in that of tissue grafting may come from further knowledge of the immune mechanisms discussed. It is unlikely that radiation would be the agent used to destroy the immune response except as the result of a nuclear explosion accidentally or in war.

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A SOCIAL STUDY OF BURNS AND SCALDS IN CHILDREN.[1]

By HOWARD WILLIAMS, NANCY BOWMAN, Dip.Soc.Stud. (Melb.), A.I.H.A. (Vic.), AND GUDRUN MALARE, Socionom. Barnpsykologisk Kurator (Sweden),

Clinical Research Unit, Royal Children's Hospital, Melbourne.

ACCIDENTS from burns and scalds occur frequently and are a considerable problem. Each year the Royal Children's Hospital treats between 500 and 600 children who are burnt or scalded. One third of them are so seriously affected that they require in-patient treatment. During the three-year period, 1954 to 1956, 45 children have died from such accidents in the State of Victoria. A number of workers including Wilkinson (1944), Brown, Lewis-Fanning and Wittet (1945), Wright (1945), Moyer (1954), Seiler and Ramsay (1954), Tough (1954), Dennis and Kaiser (1954), Clements (1955), Colebrook (1956), and Tempest (1956) have shown that many of these accidents are preventible, but there is divergence of opinion as to the ways and means by which prevention can be achieved. Knowledge of the social background and circumstances of the accident is essential in planning a satisfactory programme for prevention. The present study of 286 affected children attending the Royal Children's Hospital was undertaken to provide this necessary basic information.

Material and Methods.

The study was planned to include every in-patient and every third out-patient attending the hospital with a burn or scald during a period of one year, commencing October, 1955. These patients numbered 300, but adequate data were available on 286, as 14 parents could not be personally contacted for interviewing. Of the 286 patients, 163 were in-patients and 123 out-patients. The social worker interviewed 278 parents at home and seven at the hospital. It was found that many parents were so disturbed by the accidents that interviews were best delayed until some weeks or months after the accident. The object of the study was initially explained to the parents by letter and again at the visit. All parents except 11 welcomed the social worker, and were pleased that the hospital was taking a personal interest in their problem and attempting to prevent accidents in the community. It was considered that the information obtained from the cooperative parents was reliable.

The actual place and the circumstances of the accident and the home environment were studied. The child's development and the standard of parental care and management were assessed from the facts given by the parent and from the social worker's own observations. At the same time, information was obtained on the parents' knowledge of accident prevention, and an assessment made as to whether the accident was preventible or not.

Results.

Age Incidence.

Of all burns and scalds, 66% occurred in children under the age of four years. The ratio of burns to scalds was 5:7. Of the 122 patients with burns, 13 were under one year of age, 27 between one and two years, 21 between two and three years, 11 between three and four years. Of the 164 patients with scalds, 18 were under one year, 48 between one and two years, 30 between two and three years and 21 between three and four years. From the age of four to fourteen years, the incidence of both burns and scalds gradually decreased.

Sex Incidence.

Of all patients, 172 were boys and 114 girls, a ratio of 3:2. However, in the age group two to four years, the ratio of boys to girls was further increased, and this was especially so in the scalded patients.

Circumstances of the Accident.

Of all accidents, 89% occurred in the home, while the remainder took place in a variety of places where children play. In the home, the kitchen was the place of greatest danger, as approximately half of the accidents occurred there—62% of the scalds and 31% of the burns. Over 50% of the scalds occurred during meal times, especially at the evening meal, whilst the incidence of burns was fairly evenly distributed throughout the child's day. There was no variation in the incidence of scalds during each month in the year, but the day-to-day incidence was greatest during Saturday and Sunday. However, burns showed a seasonal variation, hot metal, flame and electrical burns occurring more commonly during the winter and early spring, and sunburns during the summer.

The common accident pattern of scalds was that the child reached and spilled hot fluid from a container placed on a stove, table or bench. In 41 of these cases a cup or other container had been put down temporarily near the edge of a table or bench within reach of the child. In nine cases a flex from an electric jug or kettle or iron was left dangling and was pulled by the child. In 13 cases the child fell into or knocked over hot fluid in a container which was left lying around. In a few cases an adult or older child spilled hot fluid over the child. Seven children were scalded in a bath, hot water being run in first.

The accident patterns of burns were more varied. Thirty children touched, grasped or fell onto hot metal, usually that of a stove, iron or radiator, which was either not guarded or inadequately guarded. In nine patients a severe electric burn was caused by the child grasping the bar of an unguarded or inadequately guarded electric radiator. Fifteen patients were burnt from an unguarded open fire. Playing with explosives resulted in 17 burns, and with matches in 13 burns. Nineteen children suffered severe sunburn. The remainder were burnt in a variety of ways, the most common being by friction, by chemicals or by hot ashes from an outdoor fire. Of 21 children who

[1] Read at a meeting of the Pædiatric Society of Victoria on April 9, 1958.

had their clothing set alight, 18 were severely burnt and two died. The clothing of most patients was cotton, and was set alight by an unguarded fire, by a radiator, by matches or by explosives. Eleven patients were girls and 10 were boys.

Human Factors in the Accidents.

An assessment of the human factors involved in accidents is always difficult. The following analysis shows that there were four outstanding features. The first was that 66% of the patients involved were normal active children under the age of four years, who were engaged in playing or were exploring their environment. These children were of an age when they had not learned that certain things were dangerous. Emotional disturbance in the child did not seem to be important in the majority of accidents. However, 22 of the children were emotionally disturbed at the time of the accident, but in only a few were there grossly disturbed child-parent relationships. In two patients an epileptiform seizure was responsible. The second significant feature was that many parents seemed to be unaware that burns and scalds could happen so quickly and easily, and were so common. Also they did not adequately appreciate that routine household work commonly created situations which were particularly dangerous to very young children. This was particularly noted in 142 of the 286 parents. The third feature was that in 103 of the accidents the parent's attention was temporarily distracted from supervision of the child. The mother was either called from the room where the accident occurred (13 cases), or her attention was distracted by other children (13 cases) or she was preoccupied with other chores (52 cases), while in nine cases she was emotionally upset or actually ill. On 16 occasions the mother, who was methodical and careful, had temporarily altered her household routine and forgotten the possible danger to the young child. The fourth significant feature was that carelessness, negligence or totally inadequate parental supervision and care were found in only a few families.

Other important factors leading to these accidents were that on 12 occasions the accident seemed to be primarily due to parents under-estimating the capacity of a toddler to reach or move quickly to a hot object. In another 20 cases the parents unwisely assumed that the child had reached such a degree of responsibility that he could prevent himself from being burnt or scalded. Twenty-four children had been burnt or scalded previously, two of them more than once. Fourteen patients had had two or more accidents of a different kind, mainly injuries from falls and a few from traffic accidents.

Sociological Data.

The 123 out-patients came mainly from the more crowded industrial areas, while the 163 in-patients came from the whole metropolitan area. This is in accord with the over-all pattern of patients treated by the Royal Children's Hospital. The hospital serves the inner industrial areas for casualty work, while the family doctor treats minor injury in the outer residential areas, and only refers those patients requiring hospital treatment. If the reported cases of patients with burns and scalds treated as in-patients in other hospitals in Melbourne admitting children are taken into account, then the rate of severe burns and scalds on a child population basis is approximately the same for all municipalities in Melbourne.

Of the 286 patients, 146 came from residential areas, 107 from industrial areas, eight from emergency housing areas, 11 from areas just outside the metropolitan area and 11 were from the country; 239 of the patients lived in a house, 13 in a flat, 23 in rooms, eight in an emergency housing area and three in an institution. Approximately half of the patients lived in houses of poor plan, construction or repair, and the facilities for cooking and laundry were not good. Approximately 30% were overcrowded, that is there were more than two persons to a bedroom. In 8% the overcrowding seemed to be a contributory factor to the actual event of the accident.

An assessment was made of the general standard of family and child care, and it was considered that 61% were average, 18% above average and 21% below average, as regards material, and general educational standards and the quality of family and community life.

The distribution of patients according to the father's occupational status as classified by the Registrar-General of England and Wales (1944) was as follows: grade I, professions and executives, 12; grade II, wholesale and retail businessmen, 23; grade III, tradesmen, 73; grade IV, semiskilled workers, 86; grade V, labourers, 89. Three of the children were in the care of an institution. There was no evidence to suggest that the proportion of burns or scalds was any different in Australian born as compared with migrant families. Nor was there any difference in the incidence of burns and scalds per population basis in the inner industrial old housing areas when compared with the new post-war housing areas in some of the outer suburbs. While there was considerable variation in the cooking, heating, laundry and other facilities in the homes, the only common defect was the absence of suitable guards on open fires, hot stoves or radiators. Of the parents, 75% were considered to have at least an average knowledge of child care, but only 5% had any specific knowledge of accident prevention.

Discussion.

This study shows that many factors are involved in these accidents. Some of the most important are the age at which many of these accidents occur, the lack of awareness by parents of the ease and frequency with which they happen, the lack of education in accident prevention, and the fact that adverse environmental factors and poor child care are responsible for the smaller number of accidents. Age is important, as approximately two thirds of the accidents occurred during the age of one to four years. At this age the child is naturally curious and exploring his environment, but is still too young to have learned that certain things are dangerous. This finding is in agreement with results of all other workers. The majority of the children appeared to be average, healthy children, and there was no evidence to suppose that the majority were accident prone, or that they were emotionally disturbed at the time. It was a striking finding that so many parents were unaware that these accidents happened so frequently and easily, and that so few had any real knowledge of accident prevention.

Poor living conditions and over-crowding were not found to be a major cause. All groups of society were represented in, as far as can be determined, proportionate numbers. This finding is in agreement with Wilkinson (1944), but in disagreement with Wright (1945), Seiler and Ramsay (1954), and Tempest (1956). Colebrooke (1956) and Tempest (1956) have both emphasized the importance and frequency of burns caused by direct contact with domestic fire. However, Clements reported only 5% caused in this manner, and also pointed out the difference in the use of fire for heating in Australia. In the present series only 28 cases, approximately 10%, were caused by contact with an inadequately guarded or unguarded fire or radiator. However, many of these burns were of a serious nature, so there is a real need for an adequate guard on all fires and radiators, and manufacturers should not be able to market unguarded appliances for heating.

From figures obtained from five public hospitals in the Melbourne metropolitan area, it is estimated that approximately 2% of all children under 15 years of age are burnt or scalded at some time during their childhood. This figure is lower than the number actually involved, for an unknown number of children are treated by private practitioners for such accidents.

It seems that the majority of burns and scalds are preventible, for the larger number of the accidents occur in homes where parents have an average standard of intelligence and responsibility. This study suggests that the most important measure in prevention is to create awareness in parents of the common dangers in the home, and that routine housework commonly creates situations which are particularly dangerous for very young children. This is a difficult task, as already pointed out by Kent (1949)

and Zinder (1955). However, we consider the best way is by instruction and guidance of parents by the Maternal and Child Health Services. This department, especially through its many infant welfare centres, plays a most important role in educating mothers in infant and child care. If the staffs of these centres could undertake regular home visiting, then situations of danger such as unguarded fires, dangling electric cords, leaving of hot fluids in containers that can be reached by children, could be pointed out and explained on the spot. Other educational means such as the family doctor, mothers' clubs, radio and television and magazines can all play a useful secondary role. However, we consider the instruction in accident prevention is primarily part of a general educational programme in helping mothers to better understand and care for their children.

Summary.

1. Accidental burning and scalding of children is a considerable community problem. The Royal Children's Hospital, Melbourne, treats between 500 and 600 children with burns or scalds each year, and over one third of them require in-patient treatment.

2. Two thirds of the children are under the age of four years. Boys are affected more than girls (ratio 3:2), and scalds are commoner than burns (ratio 7:5).

3. Approximately 90% of the accidents occur in the home, 50% of them in the kitchen. Scalds are most commonly caused by the child reaching and pulling or upsetting a container with hot fluid. Burns are caused by a wider variety of accidents, from touching or falling against an unguarded stove or fire, to burns by chemicals, explosives or the sun.

4. The majority of these accidents occur in apparently normal family homes in all strata of society. Negligence or carelessness by the mother, and emotional disturbance in the mother or child are responsible for a minority of the accidents.

5. Most parents are not aware of the frequency and ease with which such accidents occur, and only a minority have received any education or information on these matters.

6. It is considered that most of these accidents are preventible, and that prevention will be principally achieved by a general educational plan by the Maternal and Child Health Services to help mothers better understand and care for their children.

Acknowledgements.

We wish to record our appreciation of the help and cooperation of the medical and nursing staff, especially Sister Cornish, of the Burns Unit.

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SEROLOGICAL TESTS FOR THE EARLY DIAGNOSIS OF CRYPTOCOCCAL INFECTION.

By KEVIN ANDERSON AND MARGARET BEECH,

From the Division of Bacteriology, Institute of Medical and Veterinary Science, Adelaide, South Australia.

NEILL, Sugg and McCauley (1951) have demonstrated serologically reactive material in the spinal fluid, blood and urine from a human case of torulosis. This material, which consists of the capsular polysaccharide of *Cryptococcus neoformans*, can be detected in body fluids by precipitation and complement fixation tests using a potent rabbit antiserum. Now that amphotericin B is showing promise in the treatment and control of cryptococcal meningitis (Rubin, Lehan, Fitzpatrick and Furcolow, 1958), the early diagnosis of this otherwise fatal infection becomes of particular importance. We are impressed by the protean manifestations of this disease, and we have examined material in this laboratory from a fatal case of meningitis which had presented a year previously with neurological signs and symptoms referable to the lumbar cord. At autopsy, these were shown to be due to a focus of cryptococcal infection deep in the cord. In cases of this type, in which torula cells were sought for and not found in the original illness, a reliable serological test might permit antibiotic therapy to be confidently begun at a comparatively early stage of the disease.

The purpose of this paper is to describe briefly a complement-fixation test for the diagnosis of cryptococcal infection based on the work of Neill and his colleagues. We further wish to appeal for specimens of spinal fluid, serum and urine from confirmed or suspected cases of torulosis so that the test may be further evaluated.

Technical Methods.

Preparation of Rabbit Antiserum.

Three young, medium-sized rabbits were chosen for immunization and test-bleedings made to exclude the presence of naturally occurring antibodies to *Cryptococcus neoformans*. A course of intravenous injections extending over 14 weeks was necessary before a significant titre of antibodies was detectable. A cryptococcal vaccine was prepared from a well capsulated variant selected by random colony sampling of a culture recovered from a fatal case of torular meningitis. After treatment with 1% formalin at 37° C. for six hours, the cells were washed and resuspended in saline. Sterility tests were carried out, and a fresh vaccine was prepared for each week of the immunization course, which is outlined in Table I. At the end of this period, test-bleedings on all rabbits showed agglutinating and complement-fixing antibodies to be present when tested against the formalinized vaccine. The animals were bled out, and the serum was separated and inactivated before being stored in one-millilitre ampoules at -20° C. Two methods were used initially to assess the potency of the rabbit antisera and also to examine samples of cerebro-spinal fluid, serum and urine for cryptococcal polysaccharide.

Wassermann Tube Technique.

A five-volume method was used, with 0·2 millilitre as unit volume. Calcium magnesium saline (Mayer, Osler, Bier and Heidelberger, 1946) was employed throughout for all dilutions. Rabbit sera were set up in doubling dilutions and incubated at 37° C. for one hour with 2·5 HD_{50} of complement *plus* the appropriate antigen or body fluid suspected of containing antigen. Two volumes of 3% sheep's red cells sensitized with 5 HD_{50} of hæmolysin were added and the tubes incubated for a further 30 minutes at 37° C. Unlysed cells were deposited by centrifugation, and the end point was taken as 50% fixation.

Perspex Plate Technique.

Two drop volumes were used from pipettes delivering 25 drops per millilitre. Antigen and 2·5 HD_{50} of complement were added to the serum, and fixation was allowed

to take place overnight at 4° C. On the following day the hæmolytic system consisting of 0·2% sheep's cells sensitized with 16 HD_{50} of hæmolysin was added. After incubation at 37° C. for two hours, the end point showing complete or almost complete fixation was noted. This test gives slightly lower titres than the tube method, but only small quantities of reacting substances are required, and it is to be preferred on this account.

Results.

Two hyperimmune rabbit sera were tested for potency against the cryptococcal vaccine. Rabbit "A" gave a titre of 1:40 by the tube method and rabbit "C" a titre of 1:80. The latter serum gave a titre of 1:40 by the plate method. Normal rabbit sera were included in every instance and gave negative results.

TABLE I.

Week.	Dose.	Opacity.
1 to 5 ..	Three consecutive daily injections of one millilitre each week.	Brown's tube No. 2 (9000 to 10,000 cells per cubic millimetre).
6 to 8 ..	Three consecutive daily injections of two millilitres each week.	Brown's tube No. 3.
9 to 11 ..	Three consecutive daily injections of two millilitres each week.	Brown's tube No. 4.
12 to 14 ..	Three consecutive daily injections of two millilitres each week.	Brown's tube No. 5.

Cerebro-Spinal Fluid.

Two fluids were available from confirmed cases of cryptococcal meningitis. Since the death of the patients, the specimens had been stored at 4° C. for periods of five months and eight months respectively. After centrifugation to exclude the possibility of residual torula cells, the fluids were tested by the tube method with serum from rabbit "C". One gave a positive reaction at a titre of greater than 1:160, the other at a titre of 1:160. Twenty-three fluids from patients without disease of the central nervous system have been examined by both techniques with entirely negative results.

Urine.

No urine specimens were available from clinical cases of torulosis, but eleven normal urines were examined after alcohol precipitation in the manner described by Neill *et alii* (1951). All specimens gave negative results by both plate and tube methods.

Serum.

Thirteen normal human sera were examined with negative results.

Summary.

A complement fixation test for the detection of cryptococcal polysaccharide in body fluids is described which may be of value in the early diagnosis of the disease.

An appeal is made for specimens of cerebro-spinal fluid, serum and urine from confirmed or suspected cases of torulosis in order that this test may be further evaluated.

Specimens should be addressed to the Division of Bacteriology, Institute of Medical and Veterinary Science, Box 14, Rundle Street Post Office, Adelaide; 0·01% "Merthiolate" should be added to specimens of urine and cerebro-spinal fluid.

Acknowledgements.

It is a pleasure to acknowledge the skilled technical assistance of Mr. E. F. Crowder, A.I.M.L.T.

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PROTECTION OF THE TESTIS IN THE TREATMENT FOR SEMINOMA OF THE TESTIS.

By J. H. MARTIN, B.Sc., Ph.D., F.Inst.P., AND E. A. EVANS, M.I.R.,

Physics Department, Peter MacCallum Clinic, Melbourne.

A REQUEST from a clinical colleague led to an investigation of the radiation received by the testicle during the treatment of seminoma of the testis. The treatment technique used involves the placing of a field of about 10 × 20 centimetres on the groin, and the procedure adopted to avoid irradiating the unaffected testicle was to place it in the inguinal canal on the unirradiated side. The surface of the body over the canal was then protected by lead. When both testes had to be protected the procedure adopted had been to wrap a tube of lead around the scrotum. Both these methods suffer from the disadvantage that substantial scattered radiation can reach the organs concerned. Measurements of the radiation received in these conditions were made by attaching suitably calibrated Baldwin micro-chambers in appropriate positions. The results of these measurements are shown in Table I, from

TABLE I.

Measurements of Scattered Radiation Using Simple Lead Shield.

Patient.	Screening Conditions.	Measurement Position.	Dose as Percentage of Incident Dose.
A	Lead sheet over scrotum, testicle in inguinal canal.	Superior and inferior border of scrotum.	8·3, 9·6, 5·2 8·2, 6·2.
	Lead sheet over scrotum, testicle in inguinal canal.	Skin surface over canal.	6·6, 9·2, 7· 6·2.
	Lead sheet over scrotum, testicle in inguinal canal.	Inguinal canal.	16·2.
	Lead sheet over scrotum, testicle in inguinal canal.	Medial surface of scrotum.	17·8.
B	Scrotum covered by lead sheet, field not extending over midline.	Superior surface of scrotum.	8·1.
		Inguinal canal.	4·8.
C	Lead cylinder round scrotum and penis.	Scrotum.	1·6, 1·8, 2·0, 0·8.

which it will be seen that substantial contributions due to scattered radiation are evident.

The asymmetrical clam-shell device shown in Figures I and II was therefore designed. The device provides no direct path for the scattered radiation while still permitting egress of the scrotum and cords. It is made from three-millimetre lead, and the upper leaf of the shell is counterbalanced, for the patient's comfort, with a spring. In Table II are listed the results of measurements made on two patients, in one of them with and without the shield in position, and it will be seen that a reduction in dose received by a factor of about 10 is apparent in using the device.

When the individual being treated for the disease is a prospective parent, if the transmission to future generations of genetic damage is to be avoided, the choice has to be made between allowing complete irradiation of the

testes with resultant sterility and endeavouring to protect the testes and thus the gene material from irradiation. The latter decision having been made, every effort should

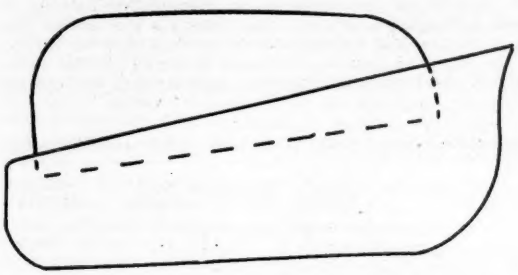

FIGURE I.

be made to reduce the dosage involved, and the use of the device described is of great value.

It cannot be emphasized too strongly that direct protection of the gonads in individuals of the relevant age

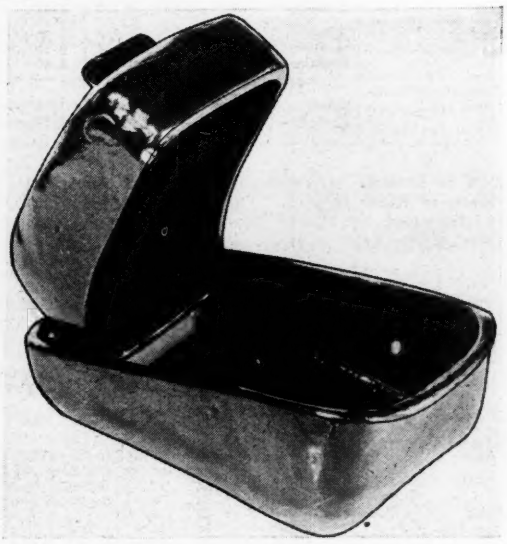

FIGURE II.

groups can make a substantial contribution to the reduction of the population gonad dose from the medical use of X rays (Martin, 1957). The use of the device described,

TABLE II.

Comparison of Scattered Radiation Received by Testis with Simple Lead Shield and with "Clam-Shell".

Measurement Position.	Dose for 185r Incident.	Percentage Incident Dose (Average).
In inguinal canal with lead shield on body surface.	4·6, 2·2, 4·2.	2·0
In "clam-shell" ..	0·5, 0·5, 0·4, 0·3.	0·2

therefore, has wider application than in the circumstances for which it is designed; and the use of it, or of the ovoids designed by Magnusson, 1952, where appropriate, and in other conditions of the protective device described by Ardran and Kemp (1957) will lead to a substantial reduction in the damage to gene material from diagnostic radiology.

Acknowledgements.

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HÆMOGLOBIN VALUES IN SOME PACIFIC NATIVE GROUPS.

By HELEN COTTER AND R. J. WALSH,

From the New South Wales Red Cross Blood Transfusion Service, Sydney.

FOR several years the N.S.W. Red Cross Blood Transfusion Service has been investigating the blood group patterns of various native populations in the Pacific region. More recently the investigations have been extended to include the hæmoglobin and plasma protein values, and for this reason the blood has been mixed at the time of collection with crystals of sodium citrate. Penicillin and streptomycin have also been added to control bacterial infection.

The results of the plasma protein investigations have been published by Brading (1958), and the hæmoglobin values from two areas have also been reported. Cotter, Kariks and Walsh (1958) found low mean hæmoglobin values in natives from the island of Bougainville to the east of the New Guinea mainland, where the mean value was 13·09 grammes per 100 millilitres for males and 11·97 grammes per 100 millilitres for females. In this region malaria is holoendemic, hookworm infestation prevalent and protein malnutrition serious. By contrast, Cotter, Walsh and Macintosh (1958) found high values in the western highlands region of New Guinea. The mean value for males was 17·20 grammes per 100 millilitres and for females 15·19 grammes per 100 millilitres, and it was thought that the high values were the result of the altitude of residence (5000 to 8000 feet). In the western highlands malaria is endemic, but the attack rate is low, hookworm infestation is subclinical, and protein malnutrition probably affects children rather than adults.

In this paper a further series of hæmoglobin values is reported. The samples were collected by various collaborators and sent to Sydney by air transport. They were always tested within ten days of collection and usually within a shorter period. The anticoagulant-antibiotic mixture and the method of blood collection have been described in detail elsewhere (Macintosh, Walsh and Kooptzoff, 1958). The technique of hæmoglobin measurement was that used by Walsh, Arnold, Lancaster, Coote and Cotter (1953).

Source of Material.

Dutch New Guinea.

The subjects tested lived in the Mindiptana-Kobontan, Hollandia and Manokwari regions. Malaria and hookworm infestations are prevalent, and the diet is protein deficient. The samples were collected by Dr. H. J. Nyessen, Dr. J. J. H. Kok, Dr. T. Romeijn and Dr. D. G. Bliek, of the Department of Public Health, Netherlands New Guinea. The ages of the subjects were estimated at the time of blood collection.

Port Moresby Medical School.

The 39 subjects tested were students at the Port Moresby training school for native medical orderlies. European dietary supplements are available, and malaria and hookworm are controlled. The samples were collected by Dr. A. V. G. Price.

Pacific Islands Regiment.

Samples from this group were collected at Port Moresby by Dr. A. V. G. Price, but the members of the regiment were recruited from all parts of the Territory of Papua and New Guinea. At least one meal a day consists of European food. Malaria prophylaxis and hookworm therapy are regularly administered. An analysis of the blood groups of these subjects has been published (Dunn, Kooptzoff, Price and Walsh, 1956).

Kukukuku Natives.

The Kukukuku live in the Morobe district of New Guinea. Before administration officers entered the area the natives were cannibals, and although this practice has been eliminated they are still difficult to control. The physique of the males is surprisingly good in view of the fact that malaria, hookworm and protein deficiency are common. The samples were collected by Dr. E. M. Craggs during patrols from Lae.

British Solomon Islands.

Dr. F. R. Hollins collected the samples from natives living in coastal regions in the vicinity of Honiara. Malaria, hookworm and malnutrition are prevalent in these islands.

Tonga.

The natives of Tonga live at or near sea level. Malaria is absent, but hookworm infestation is common. The physique of the natives is good. Except for famine periods the supply of plant foods is adequate. The blood samples were collected by Dr. L. Foliaki, of the Vaiola Hospital, Nuku'alofa.

Chimbu.

Chimbu is in the central highlands of New Guinea. The samples were collected by Dr. V. Ivinskis, and a discussion of the physique, disease pattern and culture of these people has already been published (Ivinskis, Kooptzoff, Walsh and Dunn, 1956; Venkatachalam and Ivinskis, 1957). Protein malnutrition and bacterial diseases are apparently more serious problems than malaria and hookworm. The greater part of the Chimbu region lies at about 5000 feet above sea level, rising in some parts to 8000 feet.

Results.

The results of the analyses of the hæmoglobin values of the different peoples are shown in Table I. In all instances the mean values are less and the standard deviations greater than those found in the Australian population. The mean values found in the Dutch New Guinea areas are lower than those found elsewhere.

The hæmoglobin values for each age group of the male subjects from the Manokwari region of Dutch New Guinea and of both male and female subjects from Chimbu were analysed with the results shown in Table II. These are the only areas where the ages of the subjects were estimated or where there were sufficient numbers in each group to permit analysis. It is clear that the mean values of the total subjects from these regions have not been unduly influenced by the values in any particular age group. There is a progressive fall in the mean values with increasing age in the Dutch New Guinea group, but the differences are not significant.

Discussion.

The mean hæmoglobin values for people of comparable ages are remarkably similar in Europe, North America and Australia in spite of great differences in the ethnic origins, dietary habits and socio-economic conditions. In these countries there is little evidence of malnutrition, parasitic infectious diseases occur in epidemic rather than in endemic form, and protozoal diseases are of low endemicity.

A number of factors may be responsible for the low mean hæmoglobin values found amongst the native population in tropical countries, and several may be involved in the one area. In most regions included in this survey, malaria, hookworm and protein malnutrition are common,

TABLE I.

Hæmoglobin Values of Pacific Natives Compared with Australian Subjects.

Area.	Sex of Subjects.	Number Tested.	Mean Value.	Standard Deviation.
Dutch New Guinea:				
Mindiptana-Kobontan ..	Males ..	122	12·60±0·176	1·94±0·124
	Females	80	10·78±0·188	1·68±0·133
Hollandia	Males ..	81	12·10±0·201	1·81±0·142
	Females	62	11·56±0·243	1·91±0·172
Manokwari ..	Males ..	199	12·91±0·152	2·14±0·107
	Females	42	11·03±0·313	2·03±0·222
Port Moresby Medical School	Males ..	39	14·22±0·318	1·99±0·228
Pacific Islands Regiment	Males ..	474	14·10±0·078	1·69±0·055
Kukukuku	Males ..	72	14·07±0·322	2·73±0·227
Chimbu	Males ..	258	14·86±0·132	2·12±0·093
	Females	184	13·74±0·148	2·01±0·105
British Solomon Islands	Males ..	43	13·78±0·233	1·53±0·165
Tonga	Males ..	40	14·31±0·336	2·13±0·238
	Females	49	13·47±0·378	2·65±0·268
Australia (from Walsh *et alii*, 1953) ..	Males ..	1792	15·71±0·026	1·11±0·019
	Females	1230	13·89±0·032	1·16±0·024

and it is natural to attribute population anæmia to one or more of these factors. The possible role of each has been discussed by Cotter, Kariks and Walsh (1958) in respect of the natives of Bougainville.

TABLE II.

Hæmoglobin Values for Males in Dutch New Guinea (Manokwari Region) and for Males and Females in Chimbu.

Area.	Sex.	Age Groups. (Years.)	Number of Subjects.	Mean Value.	Standard Deviation.
Dutch New Guinea ..	Males	16 to 20	49	13·31±0·316	2·21±0·223
		21 to 25	38	13·22±0·350	2·16±0·248
		26 to 30	51	12·78±0·290	2·07±0·205
		31 to 35	24	12·71±0·402	1·97±0·284
Chimbu ..	Males ..	21 to 25	25	15·08±0·321	1·61±0·227
		26 to 30	85	14·67±0·209	1·93±0·148
		31 to 35	41	14·49±0·377	2·42±0·267
		36 to 40	55	15·34±0·272	2·02±0·193
		41 to 45	25	14·58±0·426	2·13±0·301
Chimbu ..	Females	21 to 25	25	13·60±0·422	2·11±0·299
		26 to 30	65	13·78±0·178	1·44±0·126
		31 to 35	41	14·23±0·283	1·81±0·200
		36 to 40	33	12·99±0·425	2·44±0·267

The lowest values were found in Dutch New Guinea and in the British Solomon Islands, where all three factors are present. However, it is of interest that only slightly higher mean hæmoglobin values were found in the Port Moresby Medical School and in the Pacific Islands Regiment, where efforts have been made to control malaria and hookworm and to provide protein food supplements. The values for both males and females in Tonga are lower than those found in Australia in spite of the absence of malaria.

The mean values of the Chimbu natives are slightly higher than those found elsewhere in this survey, but are lower than those of the natives of the western highlands. The altitude of residence in Chimbu covers the same range as in the western highlands region, but polycythæmia has not been found in Chimbu. This difference cannot be explained.

Foy and Kondi (1957) found low mean hæmoglobin values in various regions of India, Ceylon and Africa, and stated that 80% of the patients with severe anæmia were suffering from iron deficiency. The authors pointed out that large amounts of phytic acid and phosphates are present in the diets, and probably produce insoluble iron compounds not available for absorption. This would result in the absorption of a smaller percentage of the total iron ingested than occurs in Europeans. Loss of iron in the cellular debris of sweat and the demands for iron during pregnancy and lactation in women, especially in young subjects, would aggravate the tendency to iron deficiency.

The type of anæmia has not been investigated in any of the areas included in the present survey, and no attempt has been made to determine the iron content of the food or of the blood. A satisfactory explanation cannot at present be offered for the low hæmoglobin values of the Pacific natives. The problem can be solved only by a planned investigation of each of the many possible causes acting alone or in conjunction with one another in different areas.

Summary.

Hæmoglobin values have been determined on a number of subjects from Dutch New Guinea, Australian New Guinea, the British Solomon Islands and Tonga. In all areas the mean values are lower and the standard deviations greater than the values found amongst comparable groups in Australia. Possible reasons are discussed.

Acknowledgements.

The authors wish to express their appreciation of the collaboration they have received from the medical officers named in the text.

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PROPIONYL ATROPINE METHYL NITRATE IN THE SYMPTOMATIC TREATMENT OF PEPTIC ULCER.

By S. GERSHON AND F. H. SHAW,

From the Department of Pharmacology, University of Melbourne.

BELLADONNA has been used to produce symptomatic relief from the distressing symptoms of gastric and duodenal ulcers for over a century. In more recent times the pure alkaloid, atropine, has been employed. Indeed, atropine is the standard against which all new agents are judged. As recently as 1956 Lieber stated that atropine is still the best treatment for ulcer pain.

Atropine acts by blocking peripherally the parasympathetic nervous system (anticholinergic activity). By this means the secretion of acid is reduced and the motility of the alimentary canal lessened. The more modern drugs achieve this result by blocking the ganglion in the parasympathetic pathway (ganglionic paralysis). A few of these atropine substitutes block peripherally in the same manner as atropine.

The disadvantages of atropine and all its novel competitors are that they have undesirable side actions, which may range from a dry mouth and loss of accommodation to severe headache and nausea. It would be very desirable, then, if a substance could be prepared which would not have these secondary actions. The therapeutic effect of such a compound would be enhanced if one could combine in the one molecule both anticholinergic and ganglionic blocking activity. Such a result has been achieved in propionyl atropine methyl nitrate.

Shaw and Rosenblum (1954) have shown that esterification of the hyoscine molecule with propionic acid results in a more prolonged action of the hyoscine. Later the ester of atropine and propionic acid was synthesized and its pharmacology examined. Finally, this compound was converted to the quaternary ammonium derivative, propionyl atropine methyl nitrate (PAMN).

PAMN inhibits the action of acetylcholine on the guinea pig and rat intestine (anticholinergic action). It blocks transmission through the superior cervical ganglion of the cat (ganglionic blocking action). It has slightly neuromuscular blocking action in voluntary muscle. The blood pressure is slightly lowered by PAMN. By means of the Shay rat technique it has been shown that PAMN reduces the acid secretion of the stomach (Herman *et alii*, 1958).

Herman and Shaw (1958) have shown that in man this drug reduced both the volume and the acidity of the gastric contents. The same authors also showed that the motility of the alimentary canal was reduced by PAMN. Both these effects were obtained with dosages which produced no other effects than a slight dryness of the mouth. This effect was attributed to the fact that the drug was administered to a fasting patient. When the drug was given to volunteers on a normal diet no side effects were noticed. There were also no disturbances of blood pressure or micturition.

Clinical Observations.

Two clinical trials of the use of PAMN in the treatment of the symptoms of peptic ulcer have been carried out. In the first trial the drug was administered alone in doses of six milligrammes (Series A) and in the second it was combined with 0·5 gramme of magnesium trisilicate (Series B). A total of 15 patients were tested, but two patients were treated in both trials (all the patients were in hospital). Table I gives details of these patients. The results are summarized in Table II.

TABLE I.

Details of Patients Tested in Two Clinical Trials of PAMN.

Details of Patients.	Series A.	Series B.
Sex:		
Male	5	7
Female	2	3
Age (years):		
Average	53	41
Range	40 to 70	24 to 54
Duration of symptoms (years):		
Average	7	6
Range	1 to 20	½ to 16
Type of ulcer:		
Duodenal	5	8
Gastric	1	1
Anastomotic	1	1

In another series there were 11 patients who were ambulatory. The diagnosis was not confirmed radiologically in all cases, but all patients did complain of pain. Six were diagnosed as having duodenal ulcers and five as having gastric ulcers. In all cases there was control of symptoms, but the pain was not controlled in one case. There were no side effects and no patient became worse.

The following two cases are illustrative of this series.

CASE I.—A man, aged 50 years, had suffered from gastric distress for a period of seven years, and at the time of the investigation had radiological evidence of a gastric ulcer.

He had eructations, pain after meals and at night, and also some bleeding on several occasions. He was started on PAMN, six milligrammes taken after meals and on retiring at night. He obtained considerable relief of his discomfort and eructations and relief of his pain. No side effects were experienced. This patient had a melæna with hæmatemesis, and at operation a very large non-malignant ulcer was found on the lesser curvature of the stomach.

TABLE II.
Results Obtained in Two Clinical Trials of PAMN.

Results.	Series A.	Series B.
Good	5	8
Moderate	1	2
Nil	1	0
Worse	0	0
Complications	Nil	Nil
Duration of treatment (months):		
Average	3·8	3·2
Range	1 to 8	1 to 5
Maximum acidity rise to histamine test meal before treatment (clinical units):		
Average	75	88
Range	45 to 110	50 to 110

CASE II.—The patient, a man aged 34 years, had suffered from abdominal pain, discomfort and eructations for the past 10 years, and at the time of the trial had radiological evidence of a duodenal ulcer. His symptoms persisted, although he had been on an ulcer diet, and had taken alkaline powders and various anti-spasmodic agents. This patient was started on six milligrammes of PAMN taken about one hour after meals and before retiring at night. He obtained complete relief of all pain and discomfort, although the various psychological stresses operative in his case were present as before. He has continued on this medication for a period of nine months and has remained symptom free.

Discussion.

Atropine (or belladonna) has been used for a considerable time to produce relief from the distressing symptoms of peptic ulcers. The alkaloid is still valuable and the standard against which new agents are judged. It is also the most inexpensive remedy. However, the dry mouth and loss of accommodation are serious disadvantages. Atropine acts at only one site to prevent the secretion of acid and to reduce the motility of the alimentary canal. However, if one prepares the quaternary ammonium derivative of atropine one obtains a compound with a dual action; it blocks at the parasympathetic postganglionic endings and at the ganglia. The substance propionyl atropine methyl nitrate has both these properties. Pharmacological evidence, especially the Shay rat test, indicated that the compound would be useful in the treatment of peptic ulcer. This hypothesis was strengthened when it was shown that PAMN reduced the secretion of acid and the motility of the stomach in human volunteers.

Two clinical trials with 26 patients have confirmed the value of PAMN in alleviating the distress of gastric or duodenal ulcers without producing any side effects. In particular there was no dry mouth, loss of accommodation, postural hypotension, disturbance of micturition or development of tolerance when the period of treatment extended over nine months.

The study of the effect of PAMN on acid secretion and motility was performed with volunteers, one of whom was a diabetic. This patient was an experienced research worker who fully understood the nature of his condition. He was well stabilized and rarely experienced the symptoms of hypoglycæmia. A total of 15 experiments (alcohol test meals and motility tests) were performed, and in six cases the volunteer experienced an hypoglycæmic attack. The effect of PAMN in delaying the uptake of glucose by the alimentary canal is shown in Figure I.

This result, in addition to confirming the effect of PAMN on gastric motility, suggests that this drug may be of use as an adjunct in the treatment of mild diabetes. When the patient's condition is able to be controlled by diet alone, the control may be enhanced by the use of PAMN. By this means the absorption of carbohydrate would be extended in time, the blood glucose curve would be flatter and the renal threshold would not be exceeded.

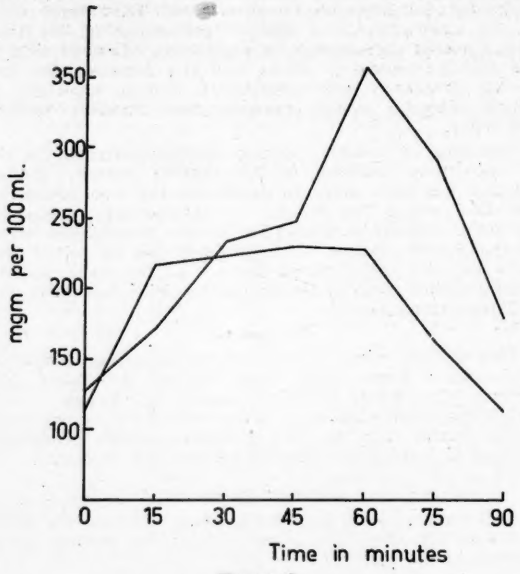

FIGURE I.

The effect of PAMN in delaying the uptake of glucose by the alimentary canal of a diabetic subject. The upper curve represents the blood sugar curve after the ingestion of 40 grammes of glucose under standard conditions. The lower curve is that obtained when six milligrammes of PAMN were taken 30 minutes before the administration of glucose.

Summary.

The use of a quaternary ammonium derivative of atropine, propionyl atropine methyl nitrate (PAMN), for the symptomatic treatment of peptic ulcers is suggested.

The substance possesses both parasympathetic and ganglionic blocking activity. The pharmacology of the substance is briefly described.

PAMN reduces the volume and degree of activity of the gastric juice. The motility of the alimentary canal is lessened.

A group of 26 patients suffering from duodenal or gastric ulcer has been treated. There was a complete alleviation of symptoms in all but one case; no patient became worse; no side effects were observed; tolerance did not develop over a period of nine months.

The absorption of carbohydrate from the alimentary canal is prolonged with a consequent flattening of the glucose tolerance curve. The use of PAMN in the treatment of mild, dietetically controlled diabetes is suggested.

Acknowledgement.

We wish to thank Dr. Ian Wood of the Clinical Research Unit, Royal Melbourne Hospital, for permission to publish the results of the first clinical trial.

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THE NORTH QUEENSLAND MEDICAL CONFERENCE.

ONLY six months after the Tenth Session of the Australasian Medical Congress (B.M.A.), but separated from it by a distance of nearly two thousand miles, the third North Queensland Medical Conference held in Mackay from September 22 to 29, 1958, maintained worthily, if in miniature, the high standard of the Congress. From both the scientific and the social points of view it was a great success. For this we offer our congratulations to the doctors of North Queensland, and especially to those of Mackay, who, under the leadership of Dr. Paul Hopkins as President and Dr. Ian Chenoweth as Secretary, were responsible for the smooth and efficient organization of the conference. Amongst the visitors were Sir Alexander Murphy, of Brisbane, who delivered the inaugural address, and Dr. Alice Stewart, of Oxford, England, who presented details of her work on the relationship between irradiation of the mother during pregnancy and the occurrence of leukæmia in the child. Dr. Stewart's contribution on this subject was part of a useful symposium on radiation and its side effects, which helped to bring the whole question into perspective. This symposium, and, indeed, all the scientific programme, had the needs of the general practitioner constantly in mind, but there was no talking down to him. The high level of all the papers presented and the discussions which followed left no doubt about the standard of general practice in North Queensland.

The North Queensland Medical Conference came into being as the result of a meeting of the Townsville Medical Association held on January 19, 1954. The prime mover was Dr. C. Petherbridge. Confident that the necessary clinical material and medical talent were available in North Queensland, Dr. Petherbridge pointed out the benefit that such a conference could be to practitioners living in their isolated centres with little opportunity to attend post-graduate courses in the capital cities. He also suggested wisely that if the conference was held in the winter or the spring it would attract visitors from the south. The idea received an encouraging response when put to the other doctors in the region, and the outcome was the first North Queensland Medical Conference held in Townsville from August 30 to September 4, 1954. This was a great success. Those present voted that the idea should be carried on, and the success was repeated at Cairns in 1956. With the happy conclusion of this year's gathering at Mackay, it may be said that the North Queensland Medical Conference is firmly established.

This conference is perhaps unique amongst gatherings of its general type in Australia, mainly because of the relative isolation of the region concerned and its manifest attractiveness to visitors from other parts of Australia. It is, of course, primarily designed to meet the needs of the North Queensland doctors, but they welcome their colleagues from elsewhere. Those who know anything of Queensland hospitality will appreciate that the warmth of the welcome they give is approached only by the balminess of the climate and the charm of the North Queensland coast in the spring. It is not too soon to note that the fourth North Queensland Medical Conference is being planned for Rockhampton in 1960.

WHOLE BODY IRRADIATION.

RADIOBIOLOGY has received an impetus from the problems confronting man in the development of nuclear weapons and a rapidly expanding atomic energy programme that has carried it to a prominent place in today's science. It takes an important place in overseas deliberations and conferences concerning atomic energy. Papers in the subject were read at the recent symposium on the peaceful uses of atomic energy in Australia. A second Australasian Conference on Radiation Biology is to be held in Melbourne in December of this year, and a third such conference is proposed to be held in Sydney in 1960.

Experimental whole body irradiation, unknown in the regions of lethal dosage in 1945, now forms an enigmatic but potentially richly rewarding medical branch of radiobiology. Its effective history goes back only seven years to the discoveries of Jacobson and Lorenz, who demonstrated that by means of injections of splenic homogenates survival could be obtained in mice that had otherwise received a lethal dose of whole body irradiation. Progress in experimental protection against lethal total body irradiation has shown that successful resuscitation depends on the "take" of a hæmopoietic graft. During the process of irradiation and bone marrow transplantation a change is effected in the irradiated host, abrogating the normal laws of tissue transplantation; so that skin from the animal providing the hæmopoietic donor tissue will, when grafted from donor to irradiated host, be accepted and persist. These findings, resulting from investigations designed to counter the lethal effects of radiation, have important implications, not only for the time when enough has been discovered to offer some hope for a person inadvertently exposed to a lethal dose of irradiation, but in the field of tissue transplantation—that is, leading to an understanding of the mechanism of organ grafting between people.

Of great topical interest in this field is the visit to Australia this month of Dr. J. F. Loutit, Director of the Medical Research Council's Radiobiological Research Unit at Harwell, who led the way in the treatment of murine leukæmia by irradiation and hæmopoietic homografting. The obstacles in the way of applying these experimental principles to human beings are by no one better understood than by those research workers employing homologous homografts. In a paper by Peter Ilbery, published in this issue (see page 596), some of the first obstacles are discussed. Avoidance of secondary radiation disease, a syndrome resulting from a chronic antigen-antibody reaction dependent on the degree of genetic divergence

between host and donor, is of prime importance. Whole body irradiation, having given a partial understanding of the mechanisms involved in the tangled immunological responses of chimærism, may itself be replaced as the agent causing abrogation of the immune response. At present the idea of whole body irradiation of man with a view to effecting hæmopoietic replacement should be viewed in the same light as the ejection of man in a *Sputnik* into space. There is as yet no return. The stimulus to further research is great.

Current Comment.

A STUDY OF EXPERIMENTAL SHOCK.

THE treatment of shock must always occupy a prominent place in traumatic surgery, and though the causes and treatment of shock have been the target of extensive investigations, the subject is by no means exhausted. During the last World War and the Korean War many victims died of massive soft tissue wounds, in spite of apparently competent and energetic treatment, shock often being the predominant feature. A series of animal experiments undertaken to study this aspect of the problem is the subject of a report from the Walter Reed Army Institute of Research, Washington, by Alton Oschner and a group of colleagues.[1] The experiments aimed at simulating the problem as met on a battlefield. From the first group of experiments it was concluded that there was no demonstrable correlation between survival time and blood loss provided that the initial loss did not exceed 15 millilitres per kilogram of body weight: that many animals died on change of position, and on various manipulations; and that the use of accepted aseptic techniques significantly prolonged life. A second group of experiments was designed to compare four types of treatment—namely, fluid replacement alone, the administration of antibiotics alone, fluid replacement *plus* antibiotics, and fluid replacement *plus* antibiotics and wound débridement. From this group of experiments it was concluded that fluid replacement alone, using whole blood, did not prevent death from shock; that far from being helpful, intravenous administration of dextran apparently hastened death; that most antibiotics were more effective in prolonging life than blood transfusion and that the wide spectrum antibiotics were the most successful; that blood replacement and antibiotics together were more successful than either alone; that the chances of survival were increased if wound débridement was also carried out, preferably within four to six hours; that débridement could be delayed if local wound cooling was used. A third group of experiments was concerned with the role of bacterial action in the irreversibility of shock, and with the results obtained when therapy was confined to the wound. The following are some of the conclusions reached: (*a*) Simple cleansing of the wound might prolong life, even if tap water alone was used; the cleansing must be carried forcefully into the damaged tissues to be effective. The addition of peroxides seemed to make no difference. (*b*) If it was obvious that amputation was inevitable, the application of a tourniquet and local cooling of the wound could prolong life, especially if antibiotics were administered systemically. (*c*) If a tourniquet could not be applied or a viable limb was expected, judicious local cooling *plus* systemic administration of antibiotics might be of benefit. (*d*) It was possible, but not certain, that local application of antibiotics might be helpful if combined with systemic antibiotic therapy. In a fourth group of experiments it was found that it was important to administer the antibiotic early to obtain best results; this was especially so with penicillin. The authors also point out that shocked animals are particularly sensitive to bacteria and toxins. The constituents of the blood serum were investigated in a fifth group of experiments, and the following findings were recorded: (i) There was no significant change in the plasma sodium concentration of any of the animals of any group, nor in the potassium concentration. (ii) In all groups the calcium concentration in the plasma fell during the first 24 hours. (iii) In all groups the plasma magnesium level increased. (iv) The non-protein nitrogen value rose immediately in all groups. (v) The urea nitrogen value paralleled the non-protein nitrogen levels. (vi) Creatinine levels rose slightly, from the time of wounding to death. (vii) Creatine values tended to show a similar increase. (viii) In goats, which were used in all these experiments, the amino-acid nitrogen level showed great variation. The authors point out that in shock most experimental animals show a rise in this figure. (ix) Circulating electrolyte values showed little change until near death. (x) The total serum protein level showed a fall six hours after injury, with a more noticeable decrease in the albumin fraction just before death. Animals shocked by toxins showed no change in the relative amounts of serum proteins.

[1] *Surgery*, 1958, 43 (May).

HYPNOTISM IN GENERAL PRACTICE.

HYPNOTISM, as a form of therapy, has its cycles, as a study of its history quickly reveals. At the moment interest in it appears to be again waxing, and some recent correspondence in this Journal shows this trend. A number of articles dealing with different aspects of it have appeared in the last few years, and there are at least two journals, one British and one American, wholly devoted to it. A discussion under the heading "An Appraisal of Hypnotism in General Practice" took place in March of this year at the Royal Society of Medicine in the Section of General Practice.[1] Opening the discussion, H. Stewart said that he had decided to use hypnotism when orthodox measures had failed with "chronic sick" patients. He had found hypnotherapy effective in three main groups of disorders: (i) psychosomatic, (ii) psychoneurotic and (iii) organic with anxiety-tension "overlay". In the first group came the asthmas, the eczemas and various gastro-intestinal upsets. In the second group Stewart mentioned particularly anxiety states and conversion hysterias; he emphasized the point that the patient was no more likely to become dependent on the hynotist than on his doctor using orthodox treatment. In the third group hypnotism was useful for removal of distressing symptoms, and as an aid to anæsthesia and analgesia in surgery and midwifery by allaying fear and inducing relaxation. Stewart commented: "There seems to be no real disadvantage in the use of hypnosis provided that one does not become too ambitious in the scope of treatment." A. A. Mason spoke as a psychiatrist. He was certain that there was no necessity for specialists or special clinics, and the general practitioner was "as well suited to use it as anyone". It was not the hypnotic state itself that was of value, but the phenomena that occurred in hypnosis. He emphasized its usefulness in minor surgery, uncomfortable instrumentation, dental fillings, lumbar puncture, antral puncture, changing of painful dressings and various orthopædic and physiotherapeutic manipulations, including the reduction of fractures and dislocations. It had proved of use as premedication for general anæsthesia and as an adjunct to local anæsthesia, and in general to remove the psychological distress of pain, especially trigeminal neuralgia, causalgia, post-herpetic neuralgia and phantom limb; even the pain of inoperable cancer could be relieved. Mason, like Stewart, had found hypnosis helpful in the management of certain gastro-intestinal disorders, such as ulcerative colitis, hysterical vomiting and persistent hiccup. As for complications, he had had only three psychotic episodes with some 300 cases—"a figure not significantly greater than the normal expectancy". The third speaker was another general practitioner, C. A. H. Watts. He said that for some years he had used hypnotism, in some cases with considerable success, but in the end he

[1] *Proc. Roy. Soc. Med.*, 1958, 51: 563 (June).

had given it up, mainly because of its uncertainty; he found that most people did not like the idea of being hypnotized, and he, the doctor, did not like the idea of possible failure. His summing up was that unless the general practitioner could help his patients by a form of psychotherapy which could be performed with the patient sitting on a chair in the consulting room, the patient should be sent to a psychiatrist. Be he also conceded that there were good medical hypnotists in the ranks of general practitioners, and that they could sometimes help people when others had failed. His concluding remark expresses the common-sense view: "While I am all for the general practitioner taking his full share of the load in psychiatry, it is a wise man who knows his own limitations."

THE ERADICATION OF PLAGUE.

ALTHOUGH plague incidence is at present the lowest the world has ever known, the disease still represents a potential threat. This was unanimously recognized by a group of plague experts which met recently at the Geneva headquarters of the World Health Organization. According to figures received by WHO, the number of human cases of plague reported in the world in 1957 was only 514. However, there still exists a number of foci of wild rodent plague which constitute "reservoirs" of plague infection. The expert committee examined the results of important studies carried out recently in many parts of the world on the incidence of plague among both wild and "commensal" or domestic rodents. WHO has assisted in researches in Iran and other Eastern Mediterranean countries, in India and in Indonesia, while in the U.S.S.R. important studies and practical work have been carried out. Much evidence has thus been accumulated concerning the complex plague reservoirs among both wild and commensal rodents, and the fleas that live on them.

On the question of whether plague could be eradicated from the face of the earth, the WHO experts concluded from work already undertaken that this was now possible on a very large scale. Indeed, results obtained in the U.S.S.R. had already demonstrated this possibility. They nevertheless emphasized the point that plague eradication campaigns should be preceded by detailed preliminary studies of the rodent populations, which were often very different in different regions.

The committee also discussed the coordination of world-wide plague research, with particular reference to systematic searches for plague among wild rodent populations in endemic areas, and the production of more effective plague vaccines. When dealing with international quarantine measures against plague, the experts agreed that wild rodent plague in little-populated regions represented a purely local risk, and that quarantine measures could therefore be restricted practically to those territories where plague-infected rats were living in intimate contact with human communities, as they were really the only effective carriers of plague infection to man.

BLANKETS AND CROSS-INFECTION.

EVERY Australian who thinks about where the butter comes from for our national bread is interested in the state of the wool market. He will therefore, especially if he is a medical man, prick up his ears at some recent remarks on woollen blankets and cross-infection made by the Deputy Chairman of C.S.I.R.O., Dr. F. G. White. These remarks arose from a statement that the Royal Adelaide Hospital had adopted cotton blankets for standard use to minimize cross-infection. As Dr. White has pointed out, the extent of cross-infection has troubled hospital authorities throughout the world for a number of years. Although it has been demonstrated that hospital furniture becomes contaminated with organisms that could cause infection of wounds, the hospital blanket has been considered the main source of infection on the assumption that contaminated fibres are released into the air during bed-making. Now, according to Dr. White, research carried out by C.S.I.R.O. Wool Textile Research Laboratories in conjunction with Melbourne hospitals has shown that 96% of the fibres in hospital air are cotton or other forms of cellulose. Only 3% of the floating fibres are wool fibres. It has also been demonstrated that bacteria on wool blankets can be killed by chemical means without deterioration of the wool provided the blankets are shrinkproofed during manufacture. Several processes are now available commercially which produce shrinkproofed blankets which stand up to repeated laundering. The statement goes on to say that woollen blankets have established themselves as combining the desirable properties of lightness with warmth, long life and non-inflammability. They give out warmth as they absorb moisture. The absence of static electricity makes them safe in the operating theatre and more convenient in bed-making. Thus, it is asserted, the accumulating evidence from research gives no justification for seeking any substitute for well proven woollen blankets for hospital use.

This is an interesting statement and a sound defence of wool. Whether it presents the whole picture of the truly worrying problem of hospital cross-infection and blankets is another matter. The Royal Adelaide Hospital must have had very good reasons for the action taken. One that springs to mind is ease and efficiency of laundering, and no doubt there are others.

SOME THOUGHTS ON THE RESULTS OF PSYCHIATRIC TREATMENT.

ANYONE who has delved far into the never-ending spate of medical literature soon realizes that, of the many enthusiastic claims made of important advances in treatment, only a proportion are corroborated by subsequent experience, even when the original claims were supported by an impressive array of case histories and statistics. The more sceptical among us therefore tend to view all new claims with initial caution, and in no field, perhaps, is caution more justified than in the realm of psychiatry, where truly objective criteria are more difficult to establish.

This is well illustrated by a salutary article on tranquillizers by Harold Bourne, published in a recent issue of this Journal,[1] and by Cedric Swanton's vigorous presidential address to the Australasian Association of Psychiatrists last November.[2] Another recent paper by four American doctors[3] provides food for reflection of a similar nature. In 1947 John Rosen made some startling claims concerning the treatment of schizophrenia by "direct analysis" and in 1952 reaffirmed his beliefs; 31 of the 37 patients reviewed were no longer psychotic and "all were doing well". The authors of the paper under consideration have been able to follow up 19 of Rosen's patients, who had attended the New York Psychiatric Institute at one stage or another, and this group has failed to show any outstanding therapeutic response. The Institute's diagnosis of seven patients was at variance with Rosen's, and these psychoneurotics did not require repeated hospital admissions or somatic treatment. Of the 12 patients originally considered schizophrenic by the Institute the direct analytic therapy by itself failed to lead to any sustained therapeutic result. Nine have had from two to five admissions to mental hospitals in this ten-year period, two have undergone psychosurgery, and more than half have required electroconvulsive therapy, insulin coma or tranquillizers. None had attained or sustained the standard for recovery set forth in Rosen's original article. The authors conclude that whatever the merits of direct analytic therapy for schizophrenia, the claim that it results in a high degree of recovery remains unproven. This is a paper which might be read with profit by all workers engaged in assessing the outcome of psychiatric treatment.

[1] M. J. AUSTRALIA, 1958, 2:189 (August 9).
[2] M. J. AUSTRALIA, 1958, 2:373 (September 20).
[3] Horwitz, W. A., Polutin, P., Kolb, L. C., and Hoch, P. H., *Am. J. Psychiat.*, March, 1958.

Abstracts from Medical Literature.

PATHOLOGY.

Nickel Carcinogenesis.

W. C. HUEPER (*Arch. Path.*, June, 1958) has found that practically all guinea-pigs and many rats belonging to two strains subjected to long-continued inhalation of finely powdered metallic nickel developed multicentric adenomatoid formations of the alveoli, and hyperplastic proliferations of the terminal bronchiolar epithelium. One guinea-pig had an anaplastic intraalveolar carcinoma, while a second guinea-pig, with extensive pulmonary adenomatosis, showed an adenomatoid node resembling in structure the pulmonary lesions, in the retroperitoneal space of the lower abdomen. Both benign and malignant pulmonary neoplastic lesions of guinea-pigs and benign hyperplastic adenomatoid proliferations in the lungs of rats are attributable to the nickel dust inhaled, and may be considered to be ætiological and organic equivalents of the respiratory neoplastic reactions seen in copper-nickel matte smelter workers. Nickel has been shown to be a carcinogen to rats, rabbits and guinea-pigs, since it is capable of eliciting sarcomata in rats and rabbits after intraosseous and subcutaneous introduction, and of producing adenomatoid, carcinomatoid and carcinomatous reactions in the lungs of guinea-pigs after inhalation of nickel dust.

Corticoids in Experimental Tuberculosis.

S. FELDMAN, A. J. BEHAR AND D. WEBER (*Arch. Path.*, March, 1958) report on the effect of corticoids in experimental tuberculosis. They produced tuberculous meningitis in rabbits by the intracisternal administration of *Mycobacterium tuberculosis* var. *bovis*. The results of treatment with antituberculosis drugs, separately and in combination with cortisone, were determined. Most of the streptomycin-treated animals died within five weeks after the induced infection. In the subarachnoid space of these animals various degrees of transformation of the tuberculous exudate into connective tissue were found. A number of animals had necrotizing angiitis with subarachnoid hæmorrhage. The substitution of isoniazid for streptomycin prolonged the course of the disease but did not cure the tuberculous process. Cortisone alone had a deleterious effect, resulting in massive caseation. The addition of cortisone to streptomycin had a similar but less pronounced effect, but it inhibited considerably the formation of connective tissue. The late substitution of isoniazid *plus* cortisone for streptomycin also did not change the course of the disease appreciably. When isoniazid was given immediately after the infection there was complete healing of the tuberculous process. If treatment was delayed for two weeks the healing was accompanied by the formation of fibrous pia-arachnoid adhesions. Isoniazid *plus* cortisone therapy started after the same delay caused complete healing of the tuberculous meningitis without any residual adhesions.

The literature on the results of treatment of experimental tuberculous meningitis by streptomycin and isoniazid is reviewed, and the importance of the degree of passage of the drugs into the cerebrospinal fluid in different species is emphasized. The authors conclude that isoniazid therapy leads to healing with formation of fibrous adhesions, if administered at a time when tuberculous subarachnoid exudate is already present; if administered together with cortisone, the formation of these adhesions was prevented. The investigation thus offers experimental evidence for the beneficial effect of the combined isoniazid and adreno-cortical therapy in tuberculous meningitis.

R. L. SCHULTZ AND M. S. OKAWAKI (*J. Lab. & Clin. Med.*, April, 1958) administered corticoids to rabbits infected with tuberculosis. They found that hydrocortisone increased the severity, whereas desoxycorticosterone caused little change. The hormones induced little change in serum proteins except for an increase in the total protein and a transitory decrease in gamma globulin with hydrocortisone. The electrolyte pattern was unaffected and the only hæmatological change was a decrease in the leucocyte count following hydrocortisone treatment.

Nephrogenous Polycythæmia.

J. FORSSELL (*Acta med. scandinav.*, Volume 161, fascicule 3, 1958) has described 28 examples of nephropathy associated with secondary polycythæmia. Hypernephroma was present in 22 cases, polycystic kidney in four, fibromyxoma of the kidney in one, and unilateral hydronephrosis in one. Nephrectomy was performed on 13 patients, after which the blood became normal in all except one, in whom polycythæmia did not develop until after operation. The writer discusses the possibility that the renal lesions may be associated with increased production of erythropoietin.

Heart Lesions in Rheumatoid Disease.

B. CRUIKSHANK (*J. Path. & Bact.*, July, 1958) studied the cardiac lesions at necropsy in 100 patients suffering from rheumatoid disease. These lesions were compared with those in uncomplicated rheumatic heart disease and in subacute bacterial endocarditis. Rheumatoid granulomata were encountered in the mitral and aortic valve rings and cusps of five patients and in the myocardium of one of these. They were unsuspected before death and only one was identified by the naked eye at necropsy. Active rheumatic heart disease was seen in one case and healed rheumatic endocarditis in five others. Non-specific chronic endocarditis was seen in nine subjects; in four of these the process was quite florid, and although the macroscopic appearances suggested old rheumatic endocarditis, the microscopic picture was different, and the author regards the lesions as rheumatoid in nature, while the other five were mild and non-specific in type. Non-specific myocarditis was seen in 10 subjects, arteritis in 20, old pericarditis in 15, and subacute pericarditis in one. Amyloidosis was observed only once. The author discusses the association of the various lesions and comes to the eventual conclusion that rheumatic fever plays no significant part in causing the cardiac lesions of rheumatoid disease.

Cardiac Amyloidosis.

R. M. MULLIGAN (*Arch. Path.*, June, 1958) has reviewed 17 cases of amyloidosis of the heart found in 1150 autopsies of persons aged 70 years or more at Colorado General Hospital. In no case was there any primary disorder such as chronic suppuration or multiple myeloma. There were 16 men and one woman (corrected ratio of 6·4 : 1), all but two of whom were 80 years of age or older. Amyloidosis of the heart caused death in seven patients and contributed in some degree to the demise of the remainder. Symptoms and signs of cardiac failure not responding to treatment were common in the histories of these subjects. The chest X-ray films revealed variable heart size, pulmonary œdema and hydrothorax. Important electrocardiographic findings were low voltage of ventricular complex, low amplitude of atrial complex, delayed intraventricular conduction, and partial atrioventricular block. At autopsy the heart size ranged from normal to very large. Coronary atherosclerosis was not usually significant. The apparent common denominators of amyloidosis of the heart, namely senility and malnutrition, involved a consideration of (i) weight loss, anæmia, poor dentition and atrophy of the liver; (ii) restricted intake, impaired absorption and faulty utilization of food; (iii) the progressive decline of blood albumin, the rise of blood globulin and the fall of thiamine with age in both sexes; and (iv) the progressive decline of blood ascorbic acid with age in men. The author regards amyloidosis as secondary on the basis of a disturbance of blood proteins, in which hyperglobulinæmia is paramount. Other factors as yet unappreciated may also be operative.

Ruptured Myocardial Infarcts.

W. J. FREEMAN (*Arch. Path.*, June, 1958) has examined the hearts of 36 subjects dying from ruptured myocardial infarcts. On histological examination there had been multiple superimposed infarcts. The common pattern was that of multiple subendocardial infarcts aged between three to seven days, surrounded by a very recent transmural infarct and associated with a single thrombotic occlusion of a major coronary artery. Clinically, death was usually thought to have occurred at less than 24 hours, or from three to seven days after infarction. The author concludes that multiple small ischæmic infarcts are followed in three to seven days by coronary thrombosis and a superimposed transmural infarct.

Dissemination of Emboli by Vertebral Plexus.

J. P. WACK, T. DUBUQUE AND J. P. WYATT (*Arch. Path.*, June, 1958), in an experimental study with labelled emboli, have studied the vertebral plexus of veins from the point of view of their importance in spread of tumour emboli. The emboli were composed of dehydrated canine blood into which radio-iron had previously been incorporated. These studies revealed that irrespective of the

route of administration, whether caval or along the vertebral venous channels, the lungs were the major end organ for such emboli. The right lung received more emboli than the left, and posturing the animal altered only the intrapulmonary distribution.

Unusual Myopathy in Systemic Lupus Erythematosus.

C. M. PEARSON AND J. N. YAMAZAKI (*Am. J. Clin. Path.*, May, 1958) have described a unique type of myopathy occurring in systemic lupus erythematosus which they think may be specific for this disease. The patient was a boy aged 15 years suffering from proved systemic lupus erythematosus. Although there was no clinical evidence of muscular involvement, the serum levels of two transaminase enzymes were markedly elevated. Prednisone caused rapid reduction to normal levels. Microscopic examination of muscle showed extensive vacuolation with hypertrophy and hyperplasia of adjacent sarcolemmal nuclei.

THERAPEUTICS.

Ethoheptazine for Pain.

L. J. CASS *et alii* (*J.A.M.A.*, April 12, 1958) discuss the use of ethoheptazine (Wy-401), 1 - methyl - 4 - carbethoxy - 4 - phenyl - hexamethylenimine, as an analgesic. This preparation is said to be an active analgesic which does not cause sedation, constipation or other side effects, and does not lead to addiction. In this study 71 patients with arthritis and other painful conditions were treated with ethoheptazine alone or with aspirin, aspirin alone or with codeine, or a placebo. One hundred milligrammes of ethoheptazine were more effective than 600 milligrammes of aspirin. In those treated with ethoheptazine *plus* aspirin or aspirin *plus* codeine, both combinations were about equally good, and both were better than the placebo.

Nitrofurantoin in Chronic Urinary Tract Infection.

E. JAWETZ, J. HOPPER AND D. R. SMITH (*Arch. Int. Med.*, October, 1957) present a study of 32 patients treated with nitrofurantoin ("Furadantin") for chronic urinary tract infection. The drug was used in the form of 50 or 100-milligramme scored tablets, or as a suspension for oral administration containing 25 milligrammes per teaspoonful; for adults the initial dose was 400 to 600 milligrammes daily for one to two weeks, usually followed by a maintenance dose of 100 to 200 milligrammes daily for weeks or months. In children, the daily dose ranged from 100 to 400 milligrammes. No other antimicrobial agents were administered concurrently. Nitrofurantoin was given for periods varying up to 17 months. During treatment, bacteria could not be cultured from the urine in most cases, but bacteriuria recurred soon after the drug was discontinued. The suppression of bacteriuria was associated with relief from symptoms, and in some cases of severe renal insufficiency it resulted in measurable improvement in renal function. Unpleasant side-effects developed in six of the 32 patients during the first few days of nitrofurantoin administration. However, the maintenance dose of 100 to 200 milligrammes daily, continued for weeks or months, was well tolerated by others. It is suggested that the protracted administration of nitrofurantoin to patients with ineradicable urinary tract infection, particularly chronic pyelonephritis without demonstrable obstruction, may usefully complement the medical management of this difficult problem.

Chlorothiazide in the Treatment of Œdema.

M. J. GOODKIND, R. M. HARVEY AND D. W. RICHARDS (*Am. J. Med. Sc.*, February, 1958) present an analysis of the use of chlorothiazide in the treatment of œdema. The observations were based upon a small series of 13 patients with resistant œdema, several of whom had proved refractory to other diuretic agents. In 10 of the patients the œdema was cardiac in origin, two were suffering from cirrhosis of the liver, and the other was a case of nephrosis. All patients were observed in hospital on a strict salt-poor regimen, with supportive therapy other than diuretics. After a control period, chlorothiazide was administered in a daily dose of two grammes, divided into four equal doses. The results obtained in most of the patients suggest that chlorothiazide is an effective oral diuretic. The only unfavourable side effect, a lowering of serum potassium levels, is inherent in the saluretic action of the drug. The authors now adopt the procedure of employing this drug on a weekly schedule of intermittent therapy, four days on and three days off. In this series diuresis occurred in seven of the 10 cardiac patients and in both patients with cirrhosis. The nephrotic patient proved resistant to all forms of therapy. No unfavourable side effects were observed, except for a transient and asymptomatic lowering of serum potassium levels in five cases.

Staphylococcal Infections.

J. A. BASS *et alii* (*J.A.M.A.*, February 15, 1958) describe an epidemic staphylococcal infection in a Texas hospital. Twenty-five cases of severe mastitis and 10 cases of severe dermatitis occurred in infants between 10 and 16 days after birth. The organism involved was a hæmolytic *Staphylococcus aureus*, resistant to penicillin, streptomycin and the tetracyclines, but susceptible to novobiocin, erythromycin, chloramphenicol and neomycin. Control measures taken to prevent spread included the examination of anterior nasal swabs taken from all personnel connected with the nursery service and the delivery room, including anæsthetists. Carriers of the epidemic strain (typable by micrococcal phages 81, 42B and 44A) were excluded from the area and given a course of systemic erythromycin therapy. All infants were moved from the nurseries for the newborn and placed in a substitute area. The nursery areas were cleaned and washed with a solution of a chlorinated powder. After the nurseries were cleaned only infants born subsequently were admitted, the infants in the substitute nursery remaining there till discharged. Cultures were taken from nasopharynx or anterior nares of all infants in the substitute nursery, and the epidemic strain was found in 11. These were treated with erythromycin. Cultures were obtained from all mothers and infants admitted to clean nurseries shortly after delivery and on discharge. The infants were treated with erythromycin prophylactically. Among hospital personnel eight carriers were found; six responded to the course of erythromycin, and of two persistent carriers, one responded to a second course of erythromycin and one to a multiple nasal antibiotic ointment ("Neopolycin"). These measures stopped the epidemic. Later there was a flare-up of staphylococcal infections which was controlled by the same measures. Among nurses in the general hospital an epidemic of boils occurred which did not respond to erythromycin, penicillin, streptomycin or the tetracyclines but responded to "Novobiocin". Discontinuance of the multiple antibiotic ointment applied to the anterior nares was followed by a sharp rise in the number of carriers.

Chlorpromazine.

M. FINK *et alii* (*J.A.M.A.*, April 12, 1958) describe a comparative study of chlorpromazine and insulin coma in the therapy of psychosis. Sixty patients referred for insulin coma were treated with chlorpromazine by mouth for at least three months in doses adjusted to fall short of toxic symptoms, such as rigidity, drooling, fixed facies, seizures or severe dermatitis. The dose was increased rapidly up to 300 to 800 milligrammes daily as a rule, though up to 2000 milligrammes daily were given in rare cases. The ages of the patients varied between 17 and 38 years. The patients became less active and less excitable or violent as a rule, though a few became more agitated. Generally, there was an improvement in symptoms during the treatment, but the psychotic process was unchanged. The patients were mostly schizophrenics. Compared with insulin coma, the results were similar, but chlorpromazine is easier to administer and less toxic, though the toxic effects mentioned above were severe and prolonged in some patients.

Prednisone in Idiopathic Thrombocytopenic Purpura.

N. DAMESEK *et alii* (*J.A.M.A.*, April 12, 1958) report the results of treatment of idiopathic thrombocytopenic purpura with prednisone. Thirty consecutive patients were treated; in 11 the condition was acute and in 19 it was chronic. Prednisone was given by mouth in doses from 20 to 150 milligrammes daily initially. The ages of the patients were from one year to 73 years; six patients were under 10 years. In 22 patients the platelet count rose from initial low values of nought to 53,000 per cubic millilitre to normal in six to 150 days. Much individual adjustment of doses was necessary. Maintenance doses of 2·5 to 15 milligrammes per day were given after normal platelet counts had been made, but in eight patients it was possible to withdraw the prednisone entirely with sustained remission. Splenectomy was performed in five patients, but was followed by complete sustained remission in only one. The conclusion was that chief reliance should be placed on prednisone and transfusions, reserving splenectomy for unresponsive cases.

British Medical Association.

NEW SOUTH WALES BRANCH: SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association, in conjunction with the School Medical Service of New South Wales, was held in the Robert H. Todd Assembly Hall, British Medical Association House, 135 Macquarie Street, Sydney, on May 29, 1958, the President, DR. A. W. MORROW, in the chair.

Asthma in Childhood.

DR. D. G. HAMILTON read a paper entitled "The Asthmatic Child" (see page 589).

DR. N. S. SOLOMONS read a paper entitled "A Study of Results Obtained at the Asthma Clinic, School Medical Service, N.S.W. Department of Public Health" (see page 592).

DR. P. C. P. WAUGH, in opening the discussion, said that he agreed with Dr. Hamilton, especially on two points. He was rather pleased that Dr. Hamilton had used the terms asthmatic and allergic as almost synonomous in relation to children, and he agreed that it was difficult to predict the value of a vaccine. However, there were two criteria that were helpful. If a child with an upper respiratory tract infection developed purulent bronchitis in two or three days and then became asthmatic, that child was not likely to respond to a vaccine. However, if a child developed an upper respiratory tract infection and asthma quickly in, say, thirty-six hours, he was probably suffering from a true bacterial allergy and was hypersensitive to coryzal organisms. The two groups could be differentiated by skin reactions. A small intradermal injection of mixed coryzal organisms was given. Some children showed a negative or slight reaction at the end of twenty-four hours. Others showed a weal and œdema at the end of twenty-four hours; they were the ones who manifested bacterial allergy as asthma, and one could confidently predict a response to vaccine therapy. Dr. Waugh referred to Dr. Hamilton's warning about the danger of using a combination of "Neo-epinine" and adrenaline and pointed out that "Martindale" also warned against the combination. Dr. Waugh also agreed about the value of physiotherapy and said that he considered it essential. The only way to remove mucky secretion from a lung was to squeeze the lung and drain it, and that could be done by means of physiotherapy.

Dr. Waugh went on to say that he was not in such agreement with Dr. Solomons. The pictures shown had indicated good results, but they were in children who were still under treatment and so were protected from stress and strain. The treatment was of the nature of "wrapping up in cotton wool". Dr. Waugh said that he was not clear about the technique of the treatment and would like to study the paper more carefully. If the results stood up to critical examination and the method used was practicable in the Australian social environment, then the results should be widely known. On the other hand it was possible that the results might not stand up to hard criticism. He considered that the work reported by Dr. Solomons was interesting but not proven.

DR. ROSS WILLIAMS said that he was interested in child guidance, and in the course of his work saw many cases of asthma and allergy. He noted Dr. Hamilton's statement that the prime irritant was emotional tension. He said that many others had made a similar statement, and in fact nobody disagreed with it, but very few people would tell one just how to advise the parents. Parents must upset their children and frustrate them in the process of guiding them to live in the complicated social structure. Therefore it was necessary for them to learn how to do it without the children being so upset by emotional reaction as to develop a psychosomatic illness. If all parents had the same approach to their children as Dr. Hamilton had to his patients, there would be no asthma. However, many parents were not grown up themselves, and did not know better. They must be taught a new way of family management. Dr. Williams then referred to the technique of Miller and Baruch in California, which had been set out in a book published in 1957. It contained step-by-step advice on dealing with emotional outbursts in children and teaching them to cope with their feelings. Such a technique had been applied to many patients in Sydney, and parents found that patients could be taught to outgrow their symptoms by the maturing of their emotional system. On the question of the absence of asthma among children in a boarding school, Dr. Williams said that that was to be expected, as the atmosphere in such schools was neutral. There was a school in the Midlands in England to which asthmatic children were sent with benefit, where none of the usual treatment was given, and the children led a normal rough-and-tumble existence. On the other hand, the boarding school suffered from the disadvantage that it involved separation of the child from its parents and loss of the opportunity for the child to model itself on the adult parent figure with which it identified itself.

Referring to Dr. Solomons's paper, Dr. Williams raised the question of what was the psychological effect of putting the child to bed, focusing the family's attention on him and fostering the belief that safety, security and relief were obtained by going to bed. It might not be until the child was grown up that one could assess the effect of such excessive care and special attention. Certainly Dr. Solomons's figures and procedure were impressive, and the family of the patient must be impressed by the results. That was likely to lead to a change of thought and attitude on the part of the family. Some asthmatic children suffered from parental rejection, and the new attitude on the part of the family could be interpreted by the child as one of acceptance. In addition, rest helped to relieve the state of anxiety.

Referring to Dr. Hamilton's use of prophylactic treatment with sulphonamides, Dr. Williams said that he agreed with the idea, but wondered about the possibility of toxic side effects. Commenting on the allergic aspect, he thought that there were few real allergic factors in asthma in young children. On the question of paranasal infection he referred to the child with a narrow nose, pinched nostrils and a high palate. He said that dental clinics in Sydney were working on the widening of the palate of such children by means of a plate which led to the development of an adequate airway and drainage. It was claimed that the procedure helped to free the nasal airway and caused the disappearance of asthma. On the question of "toughening up" the child, Dr. Williams said that this should be taken carefully—for example, the child should have a mat instead of cold linoleum in his bedroom. A child should not learn to live for his asthma.

DR. S. E. L. STENING said that he agreed with Dr. Hamilton in his views and in particular supported what he had said about the dangers of certain types of therapy. He had personal knowledge of deaths occurring from overdosage of some drugs, including cortisone. He also supported the plea for the judicious use of the needle and considered that immunization should be completed by the age of six months; he had so often seen children whose behaviour problems dated from a series of injections. With regard to Dr. Solomons's paper, Dr. Stening said that the figures were impressive, but time was on the doctor's side in the treatment of childhood asthma. If children were allergic, they remained so. If one protected them too much, it was not answering the problem.

DR. E. S. A. MEYERS, Director, School Medical Service, said that the two papers were complementary. He had been associated with the clinic for a long time. At first he had been very doubtful of its value. Then he had met a group of worried, sick, harassed mothers of asthmatic children and had noted that when the treatment commenced at the clinic the great majority of children had no more attacks, or at most only one. He did not say that the treatment given was the only treatment, but he pointed out that it did give immediate relief to children and mothers. Dr. Meyers said that the State Public Health Department did not normally carry on treatment. He would like to see the clinic closed if others were prepared to take over its work.

DR. G. L. HOWE said that he found little with which to disagree in either paper. While he had been President of the British Medical Association in the previous year he had been invited by Dr. Meyers to see the figures relating to the work of the clinic, and he had thought that they should be put before the Association. He said that it was hard to sum up the treatment at a meeting; its keynotes were, first, its simplicity and, second, the fact that rest was its most important aspect. The allergic child was bright and highly excitable and burnt himself up. The emotional disturbance led to asthma, and therefore the child needed rest. The fundamental factors behind the clinic treatment were rest, the avoidance of infection and then recovery and toughening up. The child was usually of an intelligent type and therefore could miss school without serious harm. Dr. Howe recommended that doctors should have a careful look at the treatment given at the clinic. The two papers were complementary, and neither contradicted the other.

Dr. Morrow, from the chair, said that Dr. George Bray, an Australian, had practised allergy in London in the 1920s and 1930s and laid down practically everything taught by Dr. Hamilton; the only advance in treatment was the

use of the corticosteroids. Dr. Morrow was not over-enthusiastic about the desensitization of young children.

Dr. Hamilton, in reply, said that he was very impressed with Dr. Solomons's results, but pointed out that Dr. Solomons treated other things besides infection, particularly emotional exhaustion. The asthmatic child was primed so that trivial things set him off into an attack. Rest was therefore important and helpful, and the asthmatic child should be encouraged to rest regularly. It was also important to note that not all children who developed a sniffle before an asthmatic attack were suffering from an infection. Commenting on Dr. Williams's remarks, Dr. Hamilton said that he was intrigued by the story of the inadequate parent. With mature adequate parents the children did well, and vice versa. The ability to get cooperation from an unintelligent parent was a measure of one's success as a physician. On the question of why sulphadiazine should be used and not penicillin, Dr. Hamilton said that penicillin was better for the prevention of hæmolytic streptococcus infections, but there were other organisms concerned in the usual upper respiratory tract infection. Sulphadiazine had a wide-spectrum action and was effective for a longer period because bacteria became resistant to penicillin more quickly.

Dr. Solomons, in reply, said that he was personally not an expert on asthma. His purpose had been only to present the results. The paper was complementary to that of Dr. Hamilton. The results were those obtained at the clinic and were open to examination. The method used was simple and any practitioner could supervise it.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

ALCOHOL IN THERAPEUTICS.[1]

[From the *Australasian Medical Gazette*, April, 1882.]

DR. GILBEE has started a further controversy on the excessive use of stimulants in the Melbourne Hospital. He says the patients are so drugged with brandy that when they go out of the hospital they drink by reason of the habit they have therein acquired. The charge is a serious one, but as Dr. Gilbee has had a long experience of the workings of the institution and knows thoroughly well the practice adopted within its walls, he does not speak rashly. The subject thus started may suggest the consideration of the much larger question of how far we have erred in the direction of excessive alcoholism in our progress from the depletory practice of former days. It cannot be denied that the adherents of the stimulating method have resolutely determined to see only one side of the question: and we may, therefore, one of these days reasonably expect to see a reaction from the brandy treatment, if not the lancet and tartar emetic, at any rate to easily assimilated food in place of spirituous liquors.

Correspondence.

REPORT TO THE PRIME MINISTER BY THE NATIONAL RADIATION ADVISORY COMMITTEE.

SIR: The report to the Prime Minister by the National Radiation Advisory Committee (M. J. AUSTRALIA, September 20, 1958) is in some ways a peculiar document. I think it would be agreed that this Committee, although it exists to inform the Government of the over-all picture of radiation hazards, has a similar origin to the other agencies referred to in the introduction. That is to say, it has its origin in the concern which has been felt in many communities regarding the dangers to life and health inherent in the recent nuclear discoveries, and in particular the concern which has arisen in connexion with nuclear explosive tests. At least, the matter of radiation hazards within medical practice was by no means a potent subject until the momentous politico-military interest in nuclear fission of recent years.

[1] From the original in the Mitchell Library, Sydney.

The Committee's report, however, presents no indictment or even criticism of the non-medical sources of radiation, but refers, in a sometimes ominous fashion, to a lack of appreciation which has existed, apparently for some time, within the profession itself regarding the hazards. In short, if there is to be a "radiation scapegoat" today, then the profession, and in particular its radiologists, appear to have been named. That the Committee includes several esteemed medical graduates must add further to our chagrin. All this so far must have offered a good measure of relief among those citizens whose interest in radiation these days is not purely medical, such as the Prime Minister himself, whose Government has been criticized in and out of Parliament on its policy of permitting nuclear weapon tests in this country. (I am told that the sighs of relief among government circles following the release of this report were both audible and prolonged.)

It remains now for the profession to digest its embarrassment, but before doing so, medical men, general practitioners especially, should study some of the paragraphs of this report most carefully. For instance, in paragraph 25: "The Committee believes that radiation doses to the individual and to the population as a whole should be reduced without delay by administrative and technical action." Apparently the Committee has a law, or at least a regulation, in mind. Contrast this with paragraph 31, where "the Committee formed the opinion that the risk of detectable effects on the population and on the individual from mass X-ray chest surveys is very small indeed and should be accepted at the present time". Mass chest X-ray surveys are responsible for the release of a great volume of radiation. They are, incidentally, remote from the province of general or specialist medical practice, being the function of a State government department. Apparently then, the eradication of tuberculosis is to proceed, despite paragraph 25, for which we are, of course, grateful.

Coming into the realm of medical practice at large, we might study two circumstances where the community must pay a price in radiation to assist our diagnosis and treatment. Firstly, the early diagnosis of cancer. There already exists a quite effective "deterrent" (I borrow the word) to the over-zealous use of radiation, and that is the cost to the patient. If practitioners were to employ the barium meal in the management of their middle-aged dyspeptics as often as they justifiably might, then the radiological clinics would be choked within a month. But this does not happen. If now we are to restrict further our use of this paramount aid to early diagnosis, would the Committee undertake to placate our more wealthy patients when we decline to perform such investigation on the grounds of paragraph 25 alone? Would, sir, the members of this Committee themselves save their own medical advisers the pain of declining to employ such aid, by resolving now to practise their recommendation of paragraph 25? Secondly, we should consider the management of fractures. In my (group) practice we use X rays upon the extremities after industrial (and other) injuries. If we now purposefully reduce our use of X rays in industrial cases as the recommendations would have us do, then will the Committee be ready to instruct the patient, his employer, and his insurance company that they must at times be prepared to accept a diagnosis of fracture on clinical grounds alone, without prejudice to the employee's payments, or even our scale of fees—although this could perhaps be modified in such circumstances?

Having noted an aura of unreality about these early paragraphs, medical men should not miss paragraph 37, which is in essence an almost lyrical tribute to the directorate of atomic weapon tests, above all to the Atomic Weapons Tests Safety Committee. Our fall-out is apparently light, but the simile of the luminous wrist watch (beloved by the popular Press) seems quite out of place in this report, for, after all, would it not depend upon the size of the watch, the number of numerals shown, the thickness of paint, the nature of the luminant etc.? Note also that "such excellent results" were achieved by certain devices and skills which ensured that "the radio-active cloud left Australia without significant fall-out occurring". The report does not state where the cloud may have drifted. It could be that the secret of maintaining a low fall-out over one's own country is to ensure that it falls out over another country (there is still time for the Committee to read "The Voyage of the Lucky Dragon"), but we are touching now upon ethical aspects which would be indeed a novelty in this report.

The much more important matter of strontium 90 fall-out is dismissed by four lines in paragraph 41, as being under consideration. The Committee might have added that since the thermo-nuclear device has not been, to date, exploded in or very near Australia, then the fall-out of strontium 90

depends entirely upon the testing techniques of other directorates in other places. Fall-out, of any type, over this continent is light—of that there is little doubt. It would be a grotesque miscarriage if our test management was to have produced otherwise. No doubt, however, there will be further tests, and inevitably other techniques and other devices. Perhaps the Committee has these developments in mind when it states in paragraph 41: "In due course an evaluation of the situation will be made available." There is a certain timeless beauty about these words.

To conclude, what are the issues in this report, and where does the profession stand in relation to them? What must we do, and above all, what cause will our actions serve? It seems to me that none of these questions can be answered with any substance by studying the report. Instead, one is left with three primary questions to which the entire community will demand an answer. (i) If the hazards resultant upon the non-medical use of radiation (weapon testing) are small, then why must the profession at this time reduce the over-all radiation level at the price of restricting the use of its most powerful diagnostic arm? (ii) If the over-all radiation hazards facing the community today are, in fact, critical, and are seen largely as the result of the medical use of radiation, then why must the non-medical use of radiation, however small, be permitted to add to the burden without one word of comment from the Committee? (iii) Did the Committee, during the course of its inquiry, consider that in the minds of many citizens there exists a distinction between employing radiation to assist the prolongation of life in a willing individual, and the subjection of an entire population to radiation (no matter how slight) without its consent, and, to an increasing extent, against its will? In short, the laity may well ask, if they ever read this report: "For whom is this Committee trying to make the country safe—us, or the directorate of weapon tests?"

Yours, etc.,

W. S. BENWELL.

248 Queen's Parade,
Clifton Hill,
Victoria.
October 7, 1958.

NEW SOUTH WALES STATE CANCER COUNCIL.

SIR: In reply to Dr. Alan B. Lilley's letter (M. J. AUSTRALIA, October 4, 1958) concerning the value of the monographs supplied free to the profession in this State, I should like to make a short comment on the one entitled "Carcinoma of the Breast". Written by one so distinguished on this subject as Professor Haagensen, it would scarcely have been possible for the Council to have made a better choice. Impressed by its excellence, I recently quoted it freely in a post-graduate lecture, and directed attention to it. Most of those present were aware that they had received a copy, but, alas, it seemed doubtful if any had found time to read it! It is hoped that this comment may stimulate colleagues to retrieve their copy and read it. These days we are all bombarded with literature in the post. Discrimination is needed. This particular book is a "must".

Yours, etc.,

J. M. YEATES.

143 Macquarie Street,
Sydney,
October 13, 1958.

ÆSTHETIC SURGERY.

SIR: It is difficult to understand the logic of Mr. B. K. Rank's argument against face lifting in his Edward Stirling lecture on "Æsthetic Surgery". Apart from psycho-plastic cases, he approves of rhinoplasty but condemns meloplasty—although both hooked noses and sagging faces can be deformities and may be equally offensive to their owners. We have prolonged the working life of women by many years in this century, but we have failed to prolong the elastic life of their skins, and so now some are faced with the position of having the energy of their daughters with faces of their mothers.

I agree that meloplasty is a time-consuming, difficult and bloody business (although it is painless), but, in my experience, when patients are asked if they thought the operation was worth while, they invariably say "yes", even though they know the result might only last a few years. They certainly are as grateful as rhinoplasty patients. The operation calls for the highest degree of skill with strict adherence to surgical principles, and for this reason alone it is far better for it to be done by qualified surgeons. I would go further and say it is ethically immoral to deny women our surgical knowledge and so drive them underground to the butcheries of the charlatans and quacks to whom they will go inevitably, if we adopt Mr. Rank's dictum. Let us not forget that meloplasty harms no one else, and, if properly performed, can only do good for the patient.

Yours, etc.,

GRAHAM HUMBY,
Medical Superintendent.

Royal South Sydney Hospital,
Zetland,
New South Wales.
October 8, 1958.

DIAGNOSTIC UTERINE CURETTAGE.

SIR: Would you allow me to use your columns to invite discussion upon the safety or danger of uterine curettage for diagnostic purposes? At the present moment I have grave doubts as to the complete safety of this measure. A patient of mine with a virgin uterus approached me suffering from a mild uterine hæmorrhage without any apparent signs in the uterus or adnexa. Hormone injections failed to relieve the condition and the patient was then sent to a specialist for opinion. Following a diagnostic curette, the pathologist reported "adenocarcinoma of the uterine body". In due course the uterus was resected and the patient sent home under observation. Some few weeks after dismissal from hospital she reported to me suffering from a large-sized septic swelling along the anterior vaginal wall. After a course of antibiotic treatment this condition resolved into a secondary growth involving the paraurethral duct and the urethral meatus. Following readmission to hospital, another large tumour in the left inguinal area with septic manifestations showed itself to be carcinomatous.

Now it is difficult, for me at least, to accept such later new growths as the result of ordinary lymphatic drainage, and I am temporarily forced to the conclusion that there is a grave possibility of insemination by the curette of some cells from the original tumour of the fundus into the anterior wall of the vagina. Such a happening would certainly prove to be a complete explanation of the early involvement of the paraurethral area and of the inguinal area, and it seems to me that such a possibility needs serious consideration. If my fears have any substance, then the technique of diagnostic curettage must be drastically altered. Trusting that the gynæcologists will consider this matter and proffer some further enlightenment thereon.

Yours, etc.,

L. J. SHORTLAND.

"Otaki",
Marrickville,
New South Wales.
October 7, 1958.

Obituary.

KENNETH GOODALL HEARNE.

WE are indebted to Dr. W. F. Simmons for the following appreciation of the late Dr. Kenneth Goodall Hearne.

Kenneth Goodall Hearne was born at Geelong, Victoria, on April 11, 1882. He was the third son of Mr. William Goodall Hearne, a leading pharmacist in that city. His eldest brother, Dr. William Weston Hearne, the original commanding officer of the Second Field Ambulance, A.I.F., was killed in action in France when A.D.M.S., Fifth Australian Division.

Kenneth Hearne was educated at Geelong College. In 1901 he went overseas and did not return to Australia till 1920. During this absence he entered the Medical School of the University of Edinburgh and graduated M.B., Ch.B. in 1911. After graduation he did residencies at Leith Hospital in Scotland and Salisbury Infirmary in England.

On the outbreak of World War I he enlisted in the R.A.M.C. and was posted to the Buffs at Dover for training. Later he joined one of the field ambulances attached to the famous 29th Division and was in the landing at Helles on Gallipoli in April, 1915, and remained with the Division till the evacuation when the 29th was sent to Egypt. Later

this Division saw service in Mesopotamia and he remained in that theatre of war until the armistice. During his service in Mesopotamia he was attached, as a physician, to the British General Hospital at Basra and did quite original work on the treatment of heat stroke patients admitted to the hospital. Incidentally, he informed me that while doing this work the highest human temperature he recorded was 113 degrees, while the highest temperature recorded by him in which the patient recovered was 108 degrees. After demobilization he was appointed resident house surgeon at the Hull Royal Infirmary, and while there he wrote his thesis on "The Treatment of Heat Stroke", for which the University of Edinburgh awarded him its M.D. in 1920.

In the latter half of 1920 he returned to Australia and decided to commence general practice at Arncliffe at the end of that year. He purchased a large property which was too big for his bachelor establishment, and, following an English custom in such circumstances, he converted the surplus accommodation into a private hospital, and thus was founded "Rosslyn Hospital", which today is one of the busiest private hospitals in the outer metropolitan area. In 1921 he was appointed an honorary medical officer at the St. George Hospital, Kogarah, and on reorganization of the staff in 1925 he became an in-patient physician and continued in this position till 1953, when he retired from practice and was appointed honorary consulting physician.

From 1920 till the day he died we remained close friends, and for sixteen years of that time we teamed together, until the heavy work of his practice and the hospital made it necessary for him to have full-time assistance, and Dr. Keith Potts joined him. Ken Hearne was an extraordinary person. All types of people were attracted to him and he made friends wherever he went. His colleagues in the Illawarra Suburbs Medical Association say they have never met a man like him. His principles were of the highest, his professional conduct was a model to us all, and the love and respect in which he was held by the community in which he practised had to be seen to be believed.

As was to be expected in a man whose home was also a hospital, he had to have a retreat, and so he bought "Glenayrlea" at Ewey Bay, Port Hacking, which he developed into a charming seaside home available to his friends at any time and to such organizations as the Red Cross, Boy Scouts and similar bodies whenever they needed it to hold a function. He was a delightful host and enjoyed entertaining his friends there informally. He dearly loved a joke and his fund of funny stories was limitless. When ill health compelled him to retire from practice he lived quietly at Ewey Bay, but still loved to continue the social life as if he were perfectly fit and well. His support of the Red Cross, Boy Scout movement and the District Ambulance remained almost till the end. He died in St. George Hospital, Kogarah, on May 16, 1958. At his funeral service the rector said he could not help remarking on the large number of young men present. Most of them were his personal friends who during the years they had been in the Boy Scout and other youth movements had learned to admire and respect him for the man he was.

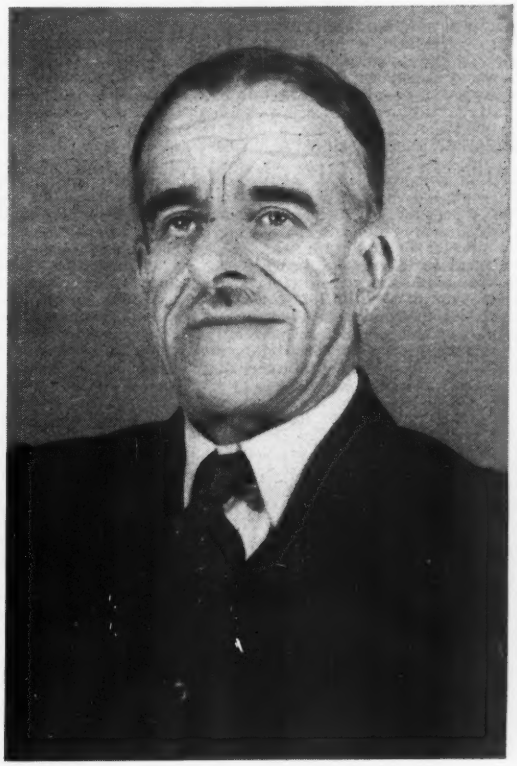
To his sisters, Mrs. King, of Vaucluse, and Miss Grace Hearne, of Clifton Gardens, goes our deepest sympathy, and may the knowledge of the love and respect in which their brother was held by his colleagues and the people of the district in which he lived and worked be some slight comfort in their great loss.

ERIC NEVILLE HARLE GANDEVIA.

WE are indebted to Mr. G. R. A. Syme for the following appreciation of the late Dr. Eric Neville Harle Gandevia.

Dr. Eric Neville Harle Gandevia, universally known to the medical profession as "Gandy", died suddenly at Bethesda Hospital on July 25, 1958, while giving an anæsthetic.

Gandy was born at Branxholme in 1891, his father, Dr. Neville Gandevia, being in general practice at Surrey Hills. He was educated at Melbourne Grammar School and subsequently did his medical course at the University of Melbourne, graduating M.B., Ch.B. in 1917. He immediately enlisted for service and went to England, where he was attached to Sutton Vimy Camp and later to A.I.F. Headquarters in London. On his return from the war in 1919 he worked at the Alfred Hospital and then spent a year at Nauru and Ocean Islands as medical officer with the British Phosphate Company. Coming back to Australia, he went into practice at Alexandra, and although he was only there for seven years, it was a tribute to the impression he made there that patients from Alexandra still used to ask for advice and help until he died. After Alexandra he practised at Abbotsford for ten years while establishing himself as an anæsthetist, which was the specialty which he had always desired to enter. He was honorary assistant anæsthetist at the Royal Melbourne, Women's and Austin Hospitals during these years. In 1937 he gave up his general practice and succeeded to Dr. Fred Green's anæsthetic practice. In 1938 he was elected as honorary anæsthetist to the Royal Melbourne Hospital, which position he occupied until 1951, when he reached the retiring age. He was President of the Australian Society of Anæsthetists in 1952. He was a foundation member of the Faculty of Anæsthetists of the Royal Australasian College of Surgeons.



Gandy was brought up in the "rag and bottle" era of anæsthesia and nobody could conduct this method better. For many years he anæsthetized Sir Alan Newton's goitre patients, and it was amazing how even with this form of anæsthesia he could, within a second or two of the words of command "Make her cough, Gandy", produce a straining cough sufficient to satisfy Sir Alan that his hæmostasis was complete; or if bleeding occurred, he was required to have the patient alternating rapidly between third degree complete flaccidity and an active cough reflex, enough to try the skill of the most accomplished ether anæsthetist. The advent of the more complicated gaseous and intravenous techniques arrived just as he was retiring from public hospital practice, but he gallantly acquired skill and competence at an age when most people find new techniques difficult to master.

His great hobby was horse racing, and at one time he was part owner of a horse he had bred, which was ridden as a friendly gesture by Victoria's leading jockey in a two-year-old race "up country", with the result that the public backed it to a ridiculously short price. It ran last, and he gave up owning horses after that. He was a member of Moonee Valley Racing Club and the V.A.T.C., and attended most race meetings. Because of his diminutive and dapper stature he was frequently mistaken for a jockey, and perhaps because of this he always had some very valuable inside information. He was a keen follower of cricket, having been a member of the Melbourne Cricket Club for over 50 years.

In spite of his size, his confidence and kindness inspired his patients, and many doctors, their wives and families had great cause to be grateful for the skilful services which he so generously gave them. He leaves a wife, son and daughter. His wife was a former nurse at the Alfred Hospital, and his son practises as a consultant physician. His daughter is also a trained nurse. To them all we express our sympathy.

HUGH MATHESON BURNS.

WE are indebted to Dr. Michael Kelly for the following appreciation of the late Dr. Hugh Matheson Burns.

The outstanding quality about Hugh Burns was his loyalty. He had a certain reserve which prevented him from rushing headlong into friendships; but a friendship once made lasted for life. He could be relied on to keep his word; once a promise was given it would not be forgotten. Anybody, therefore, who enjoyed his friendship possessed the rare privilege of knowing a great character. He had an understanding mind which made him see the best in everyone; he would often be the only one of the company defending someone whose faults were being discussed. And if he ever did agree that the person under discussion had faults, it would be with a humorous chuckle which made the fault seem human and more like the qualities of us more perfect beings. He was one of the most honest and straightforward people I have ever met, who, because of his humility, could be straightforward without being offensive. His honesty met with the straightforward qualities in other people and made him a very firm and loyal friend. Hugh Burns was the ideal family doctor who was able to deal with emergencies, but who did not desire any specialized knowledge. While in the army he thought of specializing and did all the training necessary to adopt a specialty. But he was unhappy when he came to practise it in the army, and he was glad to get back to the more important job of being a good general practitioner. One of the qualities of the ideal good doctor has been defined as the ability to relieve anxiety by convincing the patient that everything possible will be done for him. The job of a general practitioner has many duties, all of them learned only after years of training. When he dies, there perishes also a great deal of skilled knowledge of hundreds of families: knowledge which can be acquired by his successor painfully only and slowly.

He was the only member of a large family who went to Western Australia. He was a son of the manse. His father, the Reverend H. M. Burns, died many years ago, but his mother and several sisters are still living in Victoria.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Annual Subscription Course.

DR. A. AUSTIN EAGGER, C.B.E., Medical Director of the Slough Industrial Health Service, Slough, England, will visit Australia in November under the auspices of the Nuffield Foundation. By arrangement with the Post-Graduate Committee, Dr. Eagger will give the following lecture in the annual subscription course on Tuesday, November 18, at 8.15 p.m., in the School of Public Health and Tropical Medicine, the University of Sydney: "Organization of Area Industrial Health Services." This lecture has been arranged in conjunction with the Section of Occupational Medicine of the New South Wales Branch of the British Medical Association.

Mr. James Crooks, C.V.O., F.R.C.S., Honorary Ear, Nose and Throat Surgeon to the Hospital for Sick Children, Great Ormond Street, London, will give the following lecture on Tuesday, November 18, at 8.15 p.m., in the Stawell Hall, 145 Macquarie Street: "Tonsils and Adenoids"; and on Wednesday, November 19, at 10 a.m., will give a case demonstration at the Royal Alexandra Hospital for Children.

Course in Geriatrics.

The Post-Graduate Committee in Medicine in the University of Sydney has arranged a course in geriatrics to be held from November 11 to 20, 1958. The programme will be as follows.

Tuesday, November 11, from 9.30 a.m. to 12.30 p.m., in the Assembly Hall of the Salvation Army Headquarters, 140 Elizabeth Street (entrance by Clarke Street): "The Organization of a Geriatric Centre", Dr. Marjory Warren (Consulting Physician and Medical Director of the Geriatric Unit, West Middlesex Hospital), Dr. R. F. Butterworth, M.D. (Sir Hubert Olney Geriatric Unit, Royal Park, Melbourne), and Miss Marjorie Fish (Executive Director, American Occupational Therapy Association); "Old People's Settlements", the Reverend G. Kennedy Tucker (Brotherhood of St. Laurence, Fitzroy, Melbourne); "Old People's Clubs", Miss C. Bowen, Dip.Soc.Stud., A.I.H.A. (Social Worker, Council of the City of Sydney), and Miss L. W. Bloore (Handicrafts Section, Australian Red Cross Society).

On Tuesday, November 11, at 2.15 p.m. at the Royal Prince Alfred Hospital, there will be a clinical demonstration of geriatric cases by Dr. Marjory Warren.

On Friday, November 14, from 9.30 a.m. to 12.30 p.m., in Mark Foy's Empress Ballroom, there will be a symposium on geriatric problems, with the Right Honourable the Lord Mayor of Sydney, Alderman H. F. Jensen, in the chair, and Dr. George Procopis, Medical Director, Lidcombe State Hospital, as Moderator. The following subjects will be discussed: "General Geriatric Problems and Medical Rehabilitation", Dr. Marjory Warren; "The Part of the Physical Therapist in the Rehabilitation of the Aged", Miss Pam March (physiotherapist, Sydney); "The Part of the Occupational Therapist in the Rehabilitation of the Aged", Miss Joyce Kean (occupational therapist, Sir Hubert Olney Geriatric Unit, Royal Park, Melbourne); "Nursing of the Aged", Miss Muriel K. Doherty, R.R.C.; "The Part of the Social Worker in the Rehabilitation of the Aged", Miss Kate Ogilvie, M.B.E., B.A. (Lecturer in Medical Social Work, University of Sydney).

The foregoing sessions have been arranged in conjunction with the Pan-Pacific Rehabilitation Conference.

On Tuesday, November 18, at 3 p.m. at the Repatriation General Hospital, Concord, there will be a clinical demonstration of geriatric cases by Dr. Marjory Warren.

On Thursday, November 20, at 8.15 p.m. in the Stawell Hall, 145 Macquarie Street, Dr. Marjory Warren will speak on "Fundamental Principles in the Medical Care of Old Persons".

The foregoing course will be available to members of the annual subscription course without further charge. Non-members wishing to attend are required to join the annual subscription course, the annual fee for which is £2 2s., from July 1. The fee for first and second year resident medical officers is £1 1s. All fees are payable in advance. Those wishing to attend the course in geriatrics are requested to apply to the Course Secretary, Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney, for entry cards for the lectures during the first week. The closing date for applications is Thursday, November 6, 1958.

Week-End Course in Respiratory Diseases.

The Post-Graduate Committee in Medicine in the University of Sydney announces that a post-graduate week-end course in respiratory diseases will be held in the Page Chest Pavilion of the Royal Prince Alfred Hospital on Saturday and Sunday, November 15 and 16, 1958. The programme is as follows:

Saturday, November 15: 9.30 a.m.: Opening remarks by Dr. Cotter Harvey. 9.40 a.m.: "Recent Advances Abroad", Dr. H. M. Rennie. 10.30 a.m.: "Biopsy Techniques in Diagnosis", Dr. Peter Harvey. 11.30 a.m.: (i) "Chronic Bronchitis", Dr. Geoffrey McDonald; (ii) "Asthma", Dr. John Sands; (iii) "Emphysema"—(*a*) functional pathology, Dr. H. J. H. Colebatch, (*b*) clinical picture and treatment, Dr. H. M. Rennie, (*c*) cor pulmonale, Dr. J. G. Richards. 2 p.m.: "Pitfalls in the Diagnosis of Pulmonary Tuberculosis", Dr. Cotter Harvey. 2.30 p.m.: "Management of Pulmonary Tuberculosis"—(*a*) medical, Dr. C. G. Bayliss and Dr. A. G. McManis, (*b*) surgical, Dr. Ian Monk. 4.15 p.m.: "Bronchiectasis: Diagnosis and Treatment", Dr. John Alexander. 5 p.m.: "The Silent Solitary Lesion", Dr. Rowan Nicks.

Sunday, November 16: 9.30 a.m.: "Modes of Presentation of Lung Cancer", Dr. Maurice Joseph. 10 a.m.: "Radiotherapy and Chemotherapy in Treatment of Malignant Disease of Thorax", members of radiotherapy department, Royal Prince Alfred Hospital. 11.30 a.m.: Panel discussion and quiz session (chairman, Dr. Cotter Harvey).

The fee for attendance at this course is £3 3s., and those wishing to attend are requested to make written application,

enclosing remittance, to the Course Secretary, Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BU 4497-8. Telegraphic address: "Postgrad Sydney."

ROYAL PRINCE ALFRED HOSPITAL: EAR, NOSE AND THROAT DEPARTMENT.

Seminar Programme, 1958-1959.

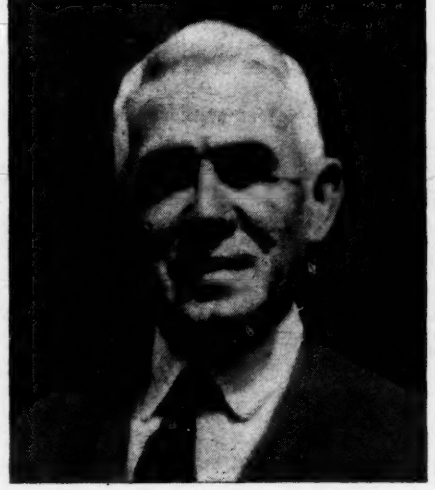
THE staff of the Ear, Nose and Throat Department will conduct a seminar on the second Saturday of every month at 8 a.m. in the Scot Skirving Lecture Theatre, Royal Prince Alfred Hospital. The main speaker will not exceed forty minutes, and there will be a discussion at the conclusion of his remarks. All medical practitioners and clinical students are invited to attend.

At the next seminar, to be held on November 8, 1958, Dr. Volney Bulteau will speak on "Nasal Polypi and the Place of External Ethmoidectomy".

Australasian Medical Publishing Company Limited.

RETIREMENT OF A FOREMAN.

MR. JOSEPH ARTHUR PATRICK BLACKER, who had been for many years foreman in charge of the machine room, began



a well-earned retirement on August 8, 1958. Mr. Blacker, now seventy-two years of age, spent thirty-four years of efficient and appreciated service at The Printing House.

Notes and News.

The Queensland Society of Health.

There has been formed in Queensland recently a society known as the Queensland Society of Health, and its membership comes from the following professions: public health medical officers, medical officers of health, public health dentists, public health nurses, local authority health inspectors, laboratory technicians, health education officers, government analysts and many other allied professions. The following two clauses taken from its constitution set the aims of the Society and the manner in which it hopes to achieve them:

The aims of the Society are: (a) to promote interest in and understanding of public health among members of the Society; (b) to acquire a better understanding of each other's work in public health; (c) to keep constantly before members new developments in the field of public health, both in Australia and in other countries; (d) to help country members with their particular public health problems; (e) to promote interest in post-graduate education in public health; (f) to affiliate with any society, association or organization having aims altogether, or in part, similar to the aims of the Society; (g) to promulgate, wherever possible, the aims of the Society to persons outside the Society; (h) to do such other things as may be deemed to further any, or all, of the aims of the Society.

The aims of the Society may be promoted in any manner approved by the committee, including: (a) the arranging of regular meetings to hear addresses, to conduct symposia or to hold discussion groups; (b) the publishing of a professional journal; (c) the holding of meetings in country centres; (d) the arranging of post-graduate courses in public health.

For the first annual meeting of the Society, an oration was given in honour of Dr. J. S. C. Elkington, former Public Health Commissioner in this State, and one who is regarded as a master of public health in this country. Dr. C. E. Cook, C.B.E., of the Commonwealth Department of Health, Canberra, delivered the first Elkington Oration.

Fulbright Travel Grants, 1959-1960.

The United States Educational Foundation in Australia announces that, under the provisions of the *Fulbright Act*, travel grants are available to Australian citizens to go to the United States for study, research or lecturing at American universities and other institutions of higher learning during the year 1959-1960.

All candidates must fulfil the following requirements: (*a*) Candidates must be holders of a university degree or recognized professional qualifications. (*b*) Candidates must possess a guarantee of financial support in dollars for the proposed period of the visit to the United States. (*c*) Candidates must be affiliated with an approved American institution of higher learning. (*d*) The minimum period of study in the United States for students is one academic year. Lecturers must spend a minimum of one semester and research scholars three months in the United States (exclusive of travel time), of which about two-thirds should be spent at one university or recognized research institution. Grants cannot be given for attendance at conferences alone. All candidates are to return to reside permanently in Australia. (*e*) All candidates must be Australian citizens.

These travel grants are available for travel to the United States for or during the American academic year 1959-1960. All travel grants cover the cost of direct travel between the candidate's home in Australia and the institution he wishes to attend in the United States. No allowances are made for dependants' travel. All awards are made in open competition.

Applications are accepted in the following categories: (*a*) Visiting lecturers and research scholars (usually scholars at the post-doctoral level). The closing date for the receipt of applications in this category is January 31, 1959. (*b*) Post-graduate students. The closing date for the receipt of applications is February 28, 1959. (*c*) Special categories awards (for persons whose professions do not require highly specialized academic qualifications). These are open to visiting lecturers, research scholars and students. The closing date is March 31, 1959.

Further information and application forms may be obtained from the United States Educational Foundation, Box 89, G.P.O., Canberra, A.C.T.

Norman McAlister Gregg Prize.

The Ophthalmological Society of New South Wales announces that the Norman McAlister Gregg Prize will be awarded in 1959. The prize of 100 guineas (Australian currency) and a bronze medallion will be awarded to the British subject whose submitted original work, on any subject, is deemed to be the most valuable contribution to knowledge in ophthalmology. Intending candidates should notify the Secretary of the Society, Dr. John Hornbrook, 147 Macquarie Street, Sydney, at least two months before the closing date. Regulations for the prize are as follows:

1. Subject to the rules, the prize shall be awarded to the candidate whose work is deemed to be the most valuable contribution to knowledge in ophthalmology. In the event

of the Council being of opinion that no work is of sufficient merit it shall not award the prize.

2. A candidate must be, and declare that he is, a British subject.

3. The work submitted must be in the English language. It must be the candidate's own original work and written since the prize was last awarded (August, 1955). If such work has previously been submitted for publication, details must be supplied by the candidate.

4. The Council shall appoint examiners for each competition and the Council's decision as to the winning entry shall be final and conclusive.

5. Intending candidates shall notify the Secretary of the Society of their intention to submit contributions at least two months before the closing date.

6. Three copies of the work are to be submitted. It is to be typewritten and double spaced. Each work shall bear a motto and shall be accompanied by a sealed envelope containing the author's name and qualifications.

7. Entries will close for the present prize at midday on October 31, 1959.

Ciba Foundation Awards.

Candidates wishing to submit entries for the 1959 Ciba Foundation Awards for papers descriptive of research relevant to basic problems of aging are reminded that these must reach the Ciba Foundation not later than January 10, 1959. Information about the awards for those not already aware of the conditions may be obtained on application from G. E. W. Wolstenholme, Director and Secretary to the Executive Council, the Ciba Foundation, 41 Portland Place, London, W.1.

British Pharmacopœia, 1958.

A new edition of the British Pharmacopœia was published on March 3, 1958, and became official as from September 1. A leaflet has been received showing amendments to the British Pharmacopœia, 1958. This contains about 55 items, mostly numerical corrections. Copies of this leaflet may be obtained on application, enclosing a stamped addressed envelope, to the Secretary, British Pharmacopœia Commission, General Medical Council Office, 44 Hallam Street, London, W.1.

Society for the Study of Fertility.

The Society for the Study of Fertility announces that its next annual conference will be held in Dublin on May 28, 29 and 30, 1959. Meetings will be held in the department of anatomy, Trinity College, Dublin, at the Rotunda Hospital, Dublin, and at the Veterinary College of Ireland, Ballsbridge, Dublin. Further information may be obtained from the Local Secretary, Dr. R. G. Cross, Rotunda Hospital, Dublin.

International Congress on Plastic Surgery.

The British Association of Plastic Surgeons is holding an international congress in London from July 12 to 17, 1959. Subjects to be discussed include surgery of congenital deformities, trauma of the face, surgery of skin cancer, cosmetic surgery, industrial injuries to the hand, anæsthesia in plastic surgery, and research projects. Detailed information may be obtained from the Organizing Secretary, Mr. David Matthews, Intenational Congress on Plastic Surgery, c.o. Institute of Child Health, Hospital for Sick Children, Great Ormond Street, London, W.C.1, England.

Medical Technology Convention.

The Australasian Institute of Medical Laboratory Technology announces that a medical technology convention is to be held in Sydney from December 15 to 19, 1958. It will be the first convention of its kind to be held in Australia, and will be conducted in the following manner.

1. A two-day exhibition on December 15 and 16, 1958, in the State Ballroom will be opened by the Honourable W. F. Sheahan, Q.C., Minister for Health. It will be opened to the public at 12 noon, after a private inspection by pathologists, medical technologists and other persons directly concerned with medical technology. The exhibition will be presented from two outlooks: (*a*) Public health, in which technologists will demonstrate to the public the various techniques used in medical technology, and provision is made for a display by the Red Cross Blood Transfusion Service. Films on various aspects of pathology will also be shown. (*b*) Scientific section, in which various trade houses will display instruments and equipment used in medical laboratories. The purpose of the exhibition is twofold: (i) To interest young people who will have just completed their leaving certificate into choosing medical technology as their career. (ii) To place before the public the part the medical technologists play in the health of the community.

2. There will be two days and nights of lectures and demonstrations on December 17 and 18. During these two days, lectures will be given in the recent advances in medical technology by professors, pathologists and leading medical technologists. The day lectures will be held in the lecture theatre of the School of Public Health and Tropical Medicine, University of Sydney, and the night lectures in Kodak House on Thursday, December 18, and at the Red Cross Blood Transfusion Bank, York Street, on Wednesday, December 17.

3. Visits to hospital laboratories and research establishments will be arranged on Friday, December 19. This will be mainly for the benefit of country and interstate visitors.

4. The annual dinner and presentation of diplomas will be held on December 19, 1958.

Naval, Military and Air Force.

APPOINTMENTS.

THE following appointments, changes *etc.* are published in the *Commonwealth of Australia Gazette*, No. 50, of September 4, 1958.

NAVAL FORCES OF THE COMMONWEALTH.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Appointment.—Thomas Noel Ryan is appointed Surgeon Lieutenant (for Short Service) (on probation), dated 20th May, 1958.

Citizen Naval Forces of the Commonwealth.

Royal Australian Naval Reserve.

Promotion.—Surgeon Lieutenant Ian Dan Carter is promoted to the rank of Surgeon Lieutenant-Commander, dated 19th June, 1958.

Transfer to the Retired List.—The following is transferred to the Retired List: Surgeon Lieutenant-Commander William Hugh Milroy, dated 30th June, 1958.

Royal Australian Naval Volunteer Reserve.

Promotion.—Surgeon Lieutenant Frederick William Wright-Short is promoted to the rank of Surgeon Lieutenant-Commander, dated 2nd April, 1958.

AUSTRALIAN MILITARY FORCES.

Citizen Military Forces.

Northern Command.

Royal Australian Army Medical Corps (Medical).—The provisional ranks of the following officers are confirmed: Captains 1/33165 D. Robertson and 1/61769 L. J. Lowth.

Eastern Command.

Royal Australian Army Medical Corps (Medical).—2/242988 Captain E. J. Lines is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Eastern Command), 3rd June, 1958. The provisional appointments of the following officers are terminated: Captains 2/62339 B. R. Hanley, 3rd February, 1958, 2/217015 V. W. Bow, 6th February, 1958, and 2/235604 D. P. Ewing, 21st February, 1958. To be Captains (provisionally): 2/62339 Brian Robert Hanley, 4th February, 1958, 2/217015 Verner William Bow, 7th February, 1958, and 2/235604 Donald Peter Ewing, 22nd February, 1958. To be Captain (provisionally), 26th June, 1958: 2/773619 Geoffrey Reginald Gibson. The provisional rank of 2/127058 Captain J. B. Roche is confirmed. The provisional appointments of the following officers are terminated: Captains (provisionally) 2/116143 I. R. Vanderfield, 13th October, 1957, and 2/183744 H. A. Fisher, 19th June, 1958. To be Captains (provisionally): 2/116143 Ian Roger Vanderfield, 14th October, 1957, and 2/183744 Harold Anthony Fisher, 20th June, 1958.

Southern Command.

Royal Australian Army Medical Corps (Medical).—The provisional rank of 3/101029 Captain J. M. Court is confirmed. 3/101035 Captain G. J. Little is seconded whilst in the United Kingdom, 7th June, 1958. 3/101034 Captain (provisionally) R. A. Williams relinquishes the provisional rank of Captain, 17th June, 1958, and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Southern Command) in the honorary rank of Captain, 18th June, 1958. To be Captain (provisionally), 1st July, 1958: 3/129438 Bruce Douglas Appleby.

Central Command.

Royal Australian Army Medical Corps (Medical).—4/32036 Captain T. H. Beare ceases to be seconded whilst in the United Kingdom, 25th July, 1958. 4/32103 Captain C. G. Wilson is appointed from the Reserve of Officers, 10th July, 1958. 4/32085 Captain (provisionally) Z. Seglenieks relinquishes the provisional rank of Captain, 22nd June, 1958, is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Central Command), and is granted the honorary rank of Captain, 23rd June, 1958. 1/61847 Captain (provisionally) R. M. Gray relinquishes the provisional rank of Captain, 1st July, 1958, is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Central Command), and is granted the honorary rank of Captain, 2nd July, 1958.

Tasmania Command.

Royal Australian Army Medical Corps (Medical).—To be Captain (provisionally), 22nd July, 1958: 6/15399 Thomas Hamilton Speirs Kirkland. 6/15269 Captain (provisionally) R. G. Smith is seconded whilst in the United Kingdom, 2nd June, 1958. The provisional appointments of the following officers are terminated: Captains (provisionally) 6/15421 K. S. Goulston, 3rd April, 1958, and 6/15269 R. G. Smith, 1st June, 1958. To be Captains (povisionally): 6/15421 Keith Sydney Goulston, 4th April, 1958, and 6/15269 Robert Gordon Smith, 2nd June, 1958.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps (Medical).

Northern Command.—To be Honorary Captain, 22nd July, 1958: Alfio Ottone.

Western Command.—To be Honorary Captain, 31st July, 1958: Philip Kessly.

The following officers are placed upon the Retired List (Central Command), with permission to retain their rank and wear the prescribed uniform, 31st August, 1958: Lieutenant-Colonel A. H. Lendon and Captains L. De L. Thomas and R. L. Verco.

The World Medical Association.

PRINCIPLES OF MEDICAL CARE.

THE following statement has been received from the World Medical Association.

The World Medical Association recognizes and supports only those medical care systems provided by social security that are approved by the national medical association of the country in which that system operates. In 1948 the Association adopted twelve principles to govern social security plans that include medical care. Governments and social security organizations frequently develop and try to impose medical care plans that violate these principles and therefore are not acceptable to the medical profession of the country.

The twelfth General Assembly meeting in Copenhagen, Denmark, in August, 1958, received reports on medical care plans developing under social security systems in Italy, Japan and Peru to which the national medical association in each of these countries could not subscribe, since the plans violated the principles governing free choice of doctor, freedom to prescribe medication and type of treatment, professional secrecy and professional autonomy and liberty.

The Assembly reaffirmed its firm belief that whenever medical care is provided as part of the social security system, provisions must be made to provide free choice of doctor by the patient, no intervention of a third party between the doctor and patient, no restriction of medication or mode of treatment by the doctor, and no exploitation of

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED OCTOBER 11, 1958.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	1	1	12(1)	..	..	..	..	..	14
Amœbiasis	..	..	..	..	..	..	1	..	1
Ancylostomiasis	..	..	..	..	..	..	2	..	2
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	1	..	..	..	..	1
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	4(3)	10(9)	8(5)	..	..	..	2	2	26
Diphtheria	1	..	..	..	..	..	..	..	1
Dysentery (Bacillary)	..	2(2)	1	..	3(3)	..	1	..	7
Encephalitis	..	..	..	..	..	..	..	..	..
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	2(1)	..	..	..	..	..	..	2
Infective Hepatitis	105(38)	19(15)	19(1)	14(4)	..	..	..	1	158
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	..	..	1(1)	..	..	..	..	..	1
Malaria	..	..	1	..	..	..	..	..	1
Meningococcal Infection	..	3(1)	..	1	1	..	..	..	5
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	..	..	..	..	..	..	..	..	..
Puerperal Fever	..	..	..	..	..	..	..	..	..
Rubella	..	51(38)	1	17(15)	160(150)	..	..	2	231
Salmonella Infection	..	..	..	..	..	..	..	..	..
Scarlet Fever	11(7)	18(14)	2	2	1(1)	..	..	..	34
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	1	..	1(1)	..	..	..	2
Trachoma	..	..	..	..	16	..	38	..	54
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	18(12)	14(12)	13(8)	6(3)	15(11)	10(1)	..	..	76
Typhoid Fever	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

the doctor, the doctor's services or the public by any person or organization.

The twelfth General Assembly supported the complainant member associations for refusing to accept the plans of medical care services under social security plans that violated these or any other of the twelve principles governing medical care.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

Senior University Appointments.

The Acting Vice-Chancellor of the University of Sydney, Professor C. R. McRae, has announced the following appointments by the Senate:

Dr. S. Faine, B.Med.Sc., M.B., Ch.B. (New Zealand), D.Phil. (Oxford), has been appointed Senior Lecturer in Bacteriology. After graduating from the University of New Zealand, Dr. Faine was appointed an Assistant Lecturer in Bacteriology in the University of Otago, and later became Lecturer in Microbiology in that University. His degree of Doctor of Philosophy was awarded by the University of Oxford after he had spent three years in post-graduate study there.

Mr. E. W. van Lennep has been appointed to a Senior Lectureship in Histology and Embryology. Mr. van Lennep is a graduate in science of the University of Utrecht and has completed work for a doctorate of that University. He has worked as Demonstrator and Assistant in Histology in the Department of Zoology and Senior Assistant in Veterinary Anatomy in the University of Utrecht. In 1952 he was appointed a Lecturer in Veterinary Anatomy, Histology and Embryology in the University College of Khartoum, and since 1955 has been Senior Lecturer there.

Notice.

THE CHILDREN'S MEDICAL RESEARCH FOUNDATION OF N.S.W.

THE following is a list of donations to the Children's Medical Research Foundation of N.S.W. received from members of the medical profession in the period October 8 to 14, 1958:

Dr. C. J. Gibson: £26 5s.

Dr. Eric Goulston: £25.

Dr. J. G. Furber, Dr. A. K. Barrett: £10 10s.

Dr. I. S. Edwards: £10.

Dr. S. A. Nash, Dr. Z. Keine, Dr. W. A. Conolly, Dr. C. Chancellor, Dr. H. W. Austin, Dr. V. Manass, Dr. S. Madirazzo: £5 5s.

Dr. E. J. Trenerry: £4 4s.

Dr. Joan Storey: £3 3s.

Dr. J. M. Woods, Dr. H. J. Farnsworth, Dr. D. R. Barr: £2 2s.

Dr. D. Ash: £1 1s.

Previously acknowledged: £6792 16s. 9d. Total to date: £6926 10s. 9d.

PAN-PACIFIC REHABILITATION CONFERENCE.

THE Pan-Pacific Rehabilitation Conference of the International Society for the Welfare of Cripples will be held at Mark Foy's Empress Ballroom, Castlereagh Street, Sydney, and adjacent rooms, on November 10 to 14, 1958. Overseas speakers will include the following: Professor Howard Rusk, Dr. Henry Kessler and Captain Thomas J. Canty, M.C., U.S.N., from the United States of America; Dr. Marjory Warren, Dr. A. Austin Eagger and Squadron Leader C. B. Wynn Parry, R.A.F., from the United Kingdom. A programme of the meetings to be held was published in THE MEDICAL JOURNAL OF AUSTRALIA of July 26, 1958. The programme should be of considerable interest to all medical practitioners.

Inquiries and registrations may be made through the Secretary to the Executive Committee of the Conference, Miss J. Garside, at 136 Chalmers Street, Sydney (telephone: MX 4392). The fee is £5, or 10s. per half-day session (session to be nominated).

Deaths.

THE following death has been announced:

READING.—Abe Stanley Reading, on September 1, 1958, at Sydney.

Diary for the Month.

Nov. 4.—New South Wales Branch, B.M.A.: Organization and Science Committee.
Nov. 5.—Western Australian Branch, B.M.A.: Branch Council.
Nov. 6.—South Australian Branch, B.M.A.: Council Meeting.
Nov. 7.—Queensland Branch, B.M.A.: General Meeting.
Nov. 11.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
Nov. 11.—Western Australian Branch, B.M.A.: General Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales. Anti-Tuberculosis Association of New South Wales. The Maitland Hospital.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Editorial Notices.

ALL articles submitted for publication in this Journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors submitting illustrations are asked, if possible, to provide the originals (not photographic copies) of line drawings, graphs and diagrams, and prints from the original negatives of photomicrographs. Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary is stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this Journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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